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CANADIAN HORTICULTURIST,

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EDITOR,

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The Canadian Horticulturist.

VOL. III.]

JANUARY, 1880.

[No. 1,

THE NIAGARA GRAPE.

It is one of the interesting duties of the CANADIAN HORTICULTURIST to keep its readers informed as fully as possible concerning the new fruits that are being brought to notice. To announce to the horticultural world the advent of a novelty, however valuable, is not the whole duty of those who are supposed to stand on something of vantage ground with regard to the character of the new comer, but the rather, impartially to set forth, so far as lies in their power, its true character. And this is verily not always an easy task. Those who have an interest in bringing out the new beauty have a tongue only for its excellencies and none for its defects. Besides, there is a charm about any new thing, and especially a new fruit of any merit, that throws a golden light all around it and upon it, so that we see it and think of it not in the soberness of the clear noonday, but in the mystic haziness of a lovely twilight.

Just now there is a rush of white grapes to the front, each claiming the attention of the planter, and each championed by those who are interested in its dissemination. This creates a stir among the growers of grape vines, and fills the air with the notes of preparation for a vigorous campaign, in which everything will be tried that ingenuity can devise to place the new vines profitably. It is just at such a time as this that the honest discharge of duty to our readers is especially valuable to them, and yet difficult of performance, for the most honest intentions may be thwarted by error in judgment or by lack of knowledge of all the facts upon which an intelligent judgment can be based. Yet such have been our opportunities during the past season of seeing and testing the leading competitors for popular favor, that we shall venture to give our readers the opinion we have formed of the one whose name stands at the head of this paper, believing that we shall not lead them far astray by these remarks.

The history of a new fruit is always interesting, and often helpful in forming an estimate of its probable character and worth. The

Niagara Grape was raised by C. L. Hoag, of Lockport, New York, from seed of the Concord sown in 1868. In 1872 it bore fruit of such marked excellence that he resolved to test it more fully. Having propagated a few vines, he distributed them at various points for trial, and such was the uniform quality of the fruit, and vigor and endurance of the vine, that he decided both to plant and propagate it largely. At present he has a vineyard of several hundred vines, just beginning to come into bearing. No plants of this variety have been as yet offered for sale, but Mr. Hoag is now propagating it extensively, and in due time it will be in the market. The vine is an unusually strong, vigorous grower, as we had ample opportunity of observing when passing through Mr. Hoag's young vines, while the leaves are large and leathery, well calculated to endure our sudden alternations of temperature, and resist the attacks of mildew. We were not able to find a leaf that showed any symptoms of suffering from any cause whatever. What extremes of cold the vine is able to endure unharmed, and hence how far to the northward it can be safely planted, it is not possible to say without more extended trial, but the early ripening up of the wood, which was a marked feature, gives promise of hardiness, and leads to the expectation that it will endure without injury the severe frosts of our higher latitudes.

The fruit is well represented in the cut which is here given; drawn from nature, without any attempt to stretch the truth. As will be seen, the bunches are of good size, and very compact. The berries are of the same size as the Concord, and when perfectly ripe of a light greenish amber color. The skin is tough, does not crack, so far as we can discover, and seems likely to bear handling and carriage unusually well. The pulp is soft, juicy, sweet, of good flavor, with a little touch of that peculiar muskiness which shows its American origin. The fruit begins to ripen with the Hartford Prolific, and will continue to hang on the vines not only without injury but gradually improving in sweetness and richness until hard frosts indicate the near approach of winter. This shows that it has no tendency to drop from the bunch. At the time of our visit the Hartford Prolific was just being cut for market, but we are confident they would have found but few purchasers had as many baskets of the Niagara accompanied them.

We shall be very much disappointed if this grape does not take the same place among white grapes as the Concord has taken among



the black. Everything about the vine indicates constitutional vigor, health and hardiness. Its tough, leathery leaves, strong, well ripened wood, endurance of all extremes and sudden changes in temperature; these tell of an adaptability to our climate that gives promise of successful cultivation over wide areas of territory. Even the flavor of the grape is indicative of vigor of vine; not delicate, like the Allen's Hybrid, and showing the weakness of the foreign blood, but pronounced and decided as purely of American origin. Canadian grape growers, and especially those who grow grapes for market, will do well to keep this variety in mind, note what may be said of it by disinterested parties, and give it a trial when it is offered for sale.

RECOLLECTIONS OF A RECENT JOURNEY SOUTH.

BY WM. SAUNDERS, LONDON, ONTARIO.

(Continued from Vol. 2, page 151.)

On Monday afternoon, December 2nd, the members of our party were ready for their trip towards the interior of Florida. Notwithstanding that mosquitoes were a little troublesome at nights, we had enjoyed our rest at Jacksonville, and were now eager to continue our journey. The temperature was most agreeable, the air balmy, and the sky clear and bright. We left Jacksonville about 2 p.m., and steamed up the river towards the south. The St. Johns flows, unlike any other river in the United States, directly north, for over three hundred miles, when turning abruptly to the east it empties into the Atlantic. Its whole course is through a very level country. In many parts the river is from five to six miles wide, and for the first hundred and fifty miles is in no place less than a mile in width; in point of width it is the largest river in America, but its waters are very sluggish. Many of its tributaries are navigable for a considerable distance by small steamboats. Large steamers ascend as far as Pilatka, a town of over a thousand inhabitants, seventy-five miles above Jacksonville, and beyond this smaller vessels run to Enterprise and up the Ocklawaha river to Leesburg.

Our ride from Jacksonville to Pilatka was a very pleasant one. We touched at several points of interest, including Mandarin, where

Mrs. Harriet Beecher Stowe spends her winters; Green Cove Spring, a place noted for the efficacy of its mineral waters; Picolata, one of the earliest Spanish settlements in America; and Tocoi, the terminus of the railway leading to the ancient city of St. Augustine.

The number of cattle constantly in the river along the shores attracted our attention, and we soon learned that their business there was to feed on the succulent growth at the bottom, as the land along the shores was too poor to furnish them with sufficient sustenance. It was a novel sight to see them standing hour after hour in the water, dipping their heads and necks underneath, and tearing up the weeds at the bottom. As might be expected where fodder is so scarce, milk is also very scarce and dear; we were told that a quart per day from each cow in the herd was a good average yield. Pigs also were frequently seen in the water on the same errand, sometimes so deeply engaged that nothing but the ridge on their backs could be seen above water, excepting when they lifted their heads to breathe. The river banks were wooded chiefly with live oaks and pines.

It was dark before we reached Pilatka. Here we entered another smaller boat, the *Tuscarilla*, in which we were to ascend the Ocklawaha river. Having taken in a good supply of oranges and other necessities for our three days trip, we steamed up the St. Johns about 10 p. m., and a little before midnight entered the mouth of the Ocklawaha. At daylight we were up watching the ever changing weird-like scenery—it was perfectly delightful, and must be seen to be fully understood. Here is a river without banks, its course being through the middle of an immense swamp, which frequently extends for miles along each side of the current. The channel is narrow and wonderfully tortuous; and so abrupt are the angles turned by the little boat, that with the most skilful management she often comes thumping against the cypress trees, and occasionally runs aground in spite of the efforts of the deck hands, who with long poles endeavor to force the little craft to keep within the limits of the stream. Frequently the branches of trees would sweep fiercely along the sides, and over portions of the deck, sometimes breaking the windows of our state rooms. Travel here is necessarily slow, but it matters not since no one is in a hurry.

The air was balmy and delicious; the trees and tropical undergrowth charming. Here is the home of the gigantic Cypress, *Taxodium deciduum*, where they grow from sixty to eighty feet high, with their

hoary summits beautifully festooned with Florida moss. The cypress trees being deciduous, and this the winter season, they were almost leafless, but this, although in some respects a drawback, was not without its advantages, at it gave an opportunity of looking some distance into the dense wood, and among the tangled masses of vegetation which everywhere met the eye. Among the trees in foliage, the Cabbage Palm formed the most striking feature, growing from ten to thirty or forty feet high, with its huge clusters of leaves capping a beautiful columnar trunk bristling along the upper portion with the remnants of leaf-stalks not yet shed. The hanging moss, *Tillandsia usneoides*, grows everywhere and festoons everything, giving the whole scene a unique and fantastic appearance. Some of the palms had lovely clusters of ferns growing at their summits, rooted in the base of their leafstalks. There was a very luxuriant Aster in flower all along the water course, a plant of a semi-climbing habit, twining about among the shrubs until it attains a height of six or eight feet or more, a mass of bright bloom, festooning the bushes to the water's edge. There were a great variety of shrubs, many of them evergreen, such as Bays, Hollies, &c., also climbers, and plants in profusion, including Orchids, which were parasitic on the trees, growing all the way up their trunks to a great height. We saw many beautiful water plants in flower, among others the Star Lily, which is very pretty. There was an abundance of what appeared to be a species of *Tropæolum*, very like our common Nasturtium, also very many beautiful grasses.

All day long the sun shone out with a pleasant warmth, its brightness adding beauty to the ever changing panorama which was passing before our eyes. By sunset we had reached Silver Springs Run, and another hour brought us to the Silver Springs. These springs are marvellous for the abundance of their waters and their perfect transparency. A deep river, a hundred feet wide, is created and maintained by them, which after a course of seven miles forms a junction with the Ocklawaha. At the Springs the transparency of the water is so perfect that every object can be seen at the bottom of the water almost as distinctly as in the air. It was dark when we got there, but the water was so illuminated with fires of pine knots burning on the upper deck of our vessel and along the shore, that we could see quite clearly to the bottom—a depth of from fifty to seventy feet. There were large beds of white sand at the bottom, on which we could

see fish, large and small, as distinctly as though they were within a foot or two of us. After remaining here for half an hour we retraced our journey to the mouth of Silver Springs Run, from whence our course lay further up the Ocklawaha.

FORTY DEGREES BELOW ZERO. CLIMATIC CHANGES IN
FRANCE AND CANADA. THE BALDWIN AND
SNOW APPLES, BARRIE *vs.* STRATFORD.

BY A. HOOD, BARRIE, ONT.

I do not know whether or not the climate of Ontario is really becoming permanently milder than formerly, but I do know that for the past eighteen or twenty years we have not experienced the same degree of cold as in the seven years preceding. The observatories I know will not bear me out in what I am going to say, because the nearest one, that in Toronto, always recorded ten or fifteen degrees higher than was experienced in the Township of Erin, County of Wellington, the locality to which these remarks have reference. But I assert without hesitation that for the seven years from 1855 to 1861 inclusive, the lowest reading of the thermometer for each and every winter during that period was never less than 30° below zero. But what a change there has been since, for although I still lived in Erin during the next seven years, and since then in Wroxeter, Brussels, and Fergus, and have every winter watched for the greatest degree of cold, I have never been able to record more than 22° below, and frequently not as much as that. Thirty degrees, however, was not the lowest record for that seven years, for on the sixth day of March, 1856, between seven and eight o'clock a. m., my thermometer indicated 32° below; another winter, date forgotten, 33° below; on the 19th January, 1861, 34° below. But thermometers you know are not always correct, and I frequently found it impossible to convince some parties that mine was, until an event occurred that enabled me to prove it. It is not easy to do this, because if right at the freezing point, it may not be so either above or below. We all know that water freezes at 32° above zero, and mercury at 40° below. Prove your thermometer right at these two points and every step between will be right also. This I was enabled to do on the tenth day of January, 1859, between seven

and eight o'clock a.m., for on that day the mercury was actually frozen! yes, frozen solid—clean shrunk into the bulb below the figure 40, and refused to come out again till brought within the influence of artificial heat! It will be readily imagined that as I found some people hard to convince that my thermometer was correct, they might be fully as sceptical regarding my own correctness in stating that the mercury had been frozen, so, to anticipate any doubts on that score, I was no sooner convinced of the frozen state of the mercury than I ran out and brought in two witnesses who could testify to the fact. One of them has been long since dead, but the other is alive and well, and living in the Town of Orangeville. A rather dry customer, one of the village wits, remarked, that “it was a good thing the mercury did freeze, for otherwise there was no telling how cold it might have got.”

Now, there are Baldwin apple trees in the Township of Erin, (Erin has a gravelly soil) thriving and bearing crops every year, that were planted long before 1859, proving, in a suitable soil, that apple will bear a greater degree of cold than has generally been supposed, and will sustain without injury a temperature that in more unfavorable circumstances is fatal to much hardier varieties.

I have not, as I said before, during the last eighteen years seen the thermometer more than 22° below zero, and I have not heard, what I frequently used to hear before that time, frame buildings cracking with a report as loud as that of a pistol, which was always considered an infallible indication of a hard frost, and was indeed a practical reliation of a “cold snap.” Perhaps our climate is really moderating. It may be that as the country becomes denuded of its timber the rays of the summer sun beat down upon the naked earth, which thus imbibes a latent heat that in some degree moderates the intensity of the wintry frost. And supposing our climate is thus changing, it will only be doing as other climates are supposed to have done in the times gone by. Strabo, who lived nearly nineteen centuries ago, says that the winters in the middle and north of France (then called Gaul) were so severe that it was not supposed the grape would ripen north of the Cevennes mountains. Notwithstanding which, it is a fact that the Province of Bergundy, which has for hundreds of years produced the finest wines in the world, is not only a long way north of those mountains, but is in about the same latitude as Quebec, and the vineyards are principally in terraces up the sides and on the tops of hills

averaging from eight hundred to a thousand feet in height. Bergundy is in the interior of the country, far removed from the ameliorating influence of the ocean. If, therefore, wines of the finest qualities can be produced there in latitude 47° , and at such an elevation above the sea level, why may not grapes be grown successfully in any part of Ontario?

When I read that in the neighborhood of Lindsay, and in the County of Glengarry, the Snow Apple is scarcely hardy enough to maintain itself in a healthy condition, and that in the Ottawa Valley anything less hardy than a crab cannot be depended on, I am inclined to believe that it requires something more than the severity of the climate as experienced in those localities to render so many of our hardiest varieties of apples unproductive or unreliable. The Snow Apple is of course known to succeed in localities where the climate must be quite as severe as in Lindsay; and it is certain that it grows here, in about the same latitude, without showing any signs of tenderness.

In the CANADIAN HORTICULTURIST for March, 1879, H. McLatchie, of Templeton, says, "Fameuse wood is affected by frost, as is also Red Astracan, Alexander, and Talman Sweet." Thos. Beall, of Lindsay, is reported as saying, "We can only grow the more hardy varieties, the Baldwin, and even the Snow, cannot be successfully grown." Surely the mercury does not freeze at Lindsay, even if it does at Templeton.

I have been looking over a most melancholy report from Glengarry, in our Annual for 1873, wherein very little encouragement is given for planting fruit trees, as although formerly trees did well in that section, they have during the last six years nearly all failed. It really cannot be so much colder there than in other localities where trees succeed without difficulty. But perhaps the explanation may be found in the remarks of one unsuccessful grower, viz: "Young trees all die in about two years; I suppose *when they reach clay!*" I think reaching the clay has a great deal to do with it. A writer from Pictou, in the same Annual, expresses his belief that "the dry summers are as detrimental to our trees as the cold winters, because penetrating and drying up every particle of moisture to the ends of the roots weakens the trees, and the cold winters finish them." Jas. Dougall, of Windsor, expresses a similar opinion. My own view is not that the clay does the trees any injury, unless it has a wet bottom, or that they will not

flourish on a clay soil, but that vegetation on clay soils suffers more in a time of drought than on lighter soils, and is therefore rendered less able to resist the severity of our winters; in other cases the wet bottom may be fatal, as I should suppose is the case in Glengarry.

A few words before I close about the climate of Barrie, which I have no doubt some of my readers have been in the habit of looking upon as located somewhere in the neighborhood of the north pole, and possessing a climate something like that of Ottawa or Quebec. I have seen the idea thrown out somewhere that Stratford was or might become a great fruit growing centre, but I suppose who ever said so would never have dreamt of Barrie as being worthy for one moment to be compared with it in that connection. If so, allow me to state a few facts for that individual's information, and he will perhaps be "surprised to learn" that Barrie really possesses a more favorable climate for fruit growing than Stratford, although fully one degree nearer the north pole. I have not all the statistics at hand to establish this point fully, but perhaps I have enough for my purpose. In the first place, I have three numbers only of the *Canada Farmer* for 1868, July, August, and September, in which the mean temperature of nine towns in the Dominion is given for those months, as taken from the year book of British North America. And the mean temperature for the three months is,

Barrie,	-	-	.	-	61° 50'
Stratford,	-	-	-	-	59° 79'

In July Barrie is ahead of Toronto.

Barrie,	-	-	-	-	71° 88'
Toronto,	-	-	-	-	70° 40'
Stratford,	-	-	-	-	66° 64'

In an article from the pen of A. Macallum, M.A., of Hamilton, which appears in the Report for 1872, a table of the mean temperature of ten different towns in Ontario is given for one year—spring of 1869 to spring of 1870—and here again Barrie takes the lead of Toronto.

Barrie,	-	-	-	-	44° 03'
Toronto,	-	-	-	-	43° 07'
Stratford,	-	-	-	-	42° 07'

It may not be difficult to account for the difference in favor of Barrie as compared with Stratford, when it is remembered that the latter is 1182 feet above the sea level, while the former is only 779; but I

certainly am at a loss to know why the temperature of Barrie should be higher than that of Toronto. I have however taken the figures as I found them, and if they are correct the individual above referred to will not be the only one who is "surprised to learn."

SUGAR CANE.

BY P. E. BUCKE, OTTAWA.

Perhaps it is right that some apology should be offered for writing on the above subject in a periodical devoted to fruit and flowers, but it must be admitted the article of sugar, like those mentioned, is one of the sweets of life, and therefore admissible. The importance of Canada being able to produce its own sugar, for which so many thousands of dollars are annually sent out of the country, may well lead both the government and private individuals to turn their attention to the subject of a home industry in this direction if such can be established. Everyone is aware who has given much attention to the manufacture of sugar from the beet root that it requires very expensive machinery and an exceedingly scientific treatment to produce an article suitable for commerce. These difficulties are overcome by the production of sugar from the new canes now cultivated on a large scale in the Western and other States.

Some time during the Eighteen Hundred and Fifties there was sent to the neighboring Republic by some of its foreign Consuls the seed of the Sargo, or Chinese sugar cane, and some of the Impees, or African sugar cane. These seeds were distributed by the Department of Agriculture, at Washington, all over the United States, and have apparently found a congenial home in the States of Minnesota, Illinois, Texas, Pennsylvania, Missouri, and Michigan. It will be noticed that it is not only adapted to the hotter Southern States, but comes to maturity in those whose climatic influences are similar to our own Province of Ontario. In point of fact, wherever Indian corn can be grown or grapes ripened these plants flourish, as it will arrive at maturity in a shorter season than the maize plant. The plant is a great deal similar to that of the Indian corn, with the exception that the corn bears its seed on the ear, whereas these canes have their seed on the tassel on the top of the plant.

It should have been stated that since the African and Chinese canes have been grown in America they have either been naturally hybridized or have become changed by climate, and the variety now found to contain the greatest amount of saccharine matter is the Early Amber, a variety originating in Minnesota.

The best soils for its cultivation are the same as those for corn, warm upland sandy plains; low ground, and such as have been recently manured, should be avoided. The mode of planting for sugar cane is the same as for corn; that is, in check rows made with the plough four feet apart each way. The time of planting is also the same, that is, when warm weather sets in and all danger of frost is passed. During the growing season the ground must be kept clear of weeds, and the suckers removed from the plants. When the seed is ripe or nearly so the cane should be cut. If the season is ordinarily hot the time for cutting will be about the first week in September. After cutting, the cane should be left in windrows in the field for a week or ten days to cure. After this, if not wanted to work up, it should be placed under shelter, but if possible should not be allowed to get wet or be exposed to frost, as either of these spoil the color of the syrup and sugar, though they do not materially injure it. The leaves must be stripped from the cane before using; this is usually done by placing two or three hills of cane on a raking board, one end of which rests on the ground, the other on a tressel, and whilst one man holds the tops, another rakes down the cane with a steel toothed rake, and by this process all the leaves are removed. The man holding the tops then cuts them off with a heavy knife, and lays the canes in a pile for future use. The leaves make a valuable fodder and the seed an excellent feed, the first equal to the best hay, the latter equal to oats. It requires three men to top and strip an acre per day. The bagasse, or refuse stalks from which the juice has been extracted, also makes a superior food for cattle. It will thus be seen the entire product is available for useful purposes.

For making sugar and syrup it is necessary that a mill be procured for grinding the cane and pressing the juice, and an evaporator for boiling it down. The average yield of dense syrup per acre is about one hundred and sixty gallons. The appliances generally used are the Victor Cane Mill, made by the Bloymer Manufacturing Company, Cincinnati, Ohio, and the Cook Evaporator. These are made in

different sizes to suit the capacity required. The larger the manufactory the cheaper is the work accomplished. It is claimed that great advantage is afforded in the manufacture of sugars, from the circumstance that the period of cutting and working up the crop into dense syrup occurs at a time when the season for outdoor work is most favorable and when the days are long. The work of sugar making can be arrested at a point—in the syrup state—and may be completed during the winter when labor is cheap. It is also claimed that the sugar is manufactured simply and cheaply, and at less than half the cost of beet root sugar; the carbonaceous process and the use of animal charcoal being entirely dispensed with, and the use of the vacuum pan is quite unnecessary.

Mr. S. H. Kenny, of the *Pioneer Press*, Minniapolis, Minnesota, says: "We commenced work 12th September, (the season was late) and finished 28th October, 1878, manufacturing four thousand two hundred and forty-two gallons of good dense syrup, working eighteen hours per day. The help employed besides myself was three men and two boys, and horses to run the mill, a change of which should be made every six hours. Had I used a Victor Mill No. 5 I could have accomplished the same work with one less hand. I used a No. 7 Cook Evaporator. The wood required for evaporating was fifty-six cords, all soft wood." He estimates that the expense of manufacture is twenty-six cents per gallon if the cane is bought; the price per acre delivered at the mill is twenty-five dollars, but it can be grown at seventeen dollars per acre, which would reduce the cost of manufacture five cents per gallon, making the syrup twenty-one cents per gallon. This syrup he has sold at seventy cents per gallon by the barrel. It will be seen, if these figures are correct, that there is a good margin for profit.

If necessary, facts of an official nature could be multiplied to show the success this industry has met with in its crude state, not only in manufacturing syrup but sugar also. The Early Amber cane has been successfully grown here in small quantities by more than one individual as an experiment, though no use has been made of it further than feeding to horses and cattle. These animals are exceedingly fond of it, and eat it up with great avidity. As a summer forage plant it has no equal,*as the crop raised per acre is very heavy. Some seed was sown here 12th June, 1879, and the plants were cut 22nd September for the

exhibition. Mr. Bennett, of Ottawa, showed one of these stems at the annual meeting of the Fruit Growers' Association measuring eleven feet high. A farmer between here and Montreal made some syrup in the autumn of 1878, and gave an interesting account of his success in a French paper. Col. William White, of this city, one of our esteemed members, was the first person here to introduce the seed, some of which he very kindly distributed, and some he sowed on his own grounds with very good results.

I feel quite convinced that as a sugar producer the Early Amber is destined to fill the great want of Ontario. It far surpasses the beet root, being much easier handled, and no washing is required. It is quite as productive per acre, and the appliances for manufacture are much simpler and cheaper, the chemical knowledge required not being of so scientific a nature. I trust the Ontario Government will direct that attention may be called to the manufacture of cane sugar at their Guelph model farm, and that every endeavor may be made to redeem the time lost in deciding the value of this enterprise, which has for centuries been carried on by the despised Zulus and the Chinese.

The Early Amber seed can be had from Messrs. Kenny & Miller, Dundas, Rice Co., Minnesota, U. S. A., at the following rates:

By mail,	-	-	-	60	cents for one pound.
By express,	-	-	-	50	" "
"	-	-	-	40	cents per pound for 10 pounds.
"	-	-	35	"	" 25 "
"	-	-	30	"	" 50 "
"	-	-	20	"	" 100 "

The quantity of seed to sow an acre is four pounds.

QUESTION DRAWER.

An esteemed correspondent asks:

(1.) What about the Brockworth Park Pear, about which so much was said a year or two ago? Has it proved to be a valuable variety for our climate, or is it, like many a new thing, no better than many pears we already had, or perhaps not as good?

The Brockworth Park has proved to be just as good as one of the pears we already had, for on fruiting it in this country, Chas Downing, of Newburgh, N. Y., the best living authority on such matters in America, pronounces it to be only a new name for an old sort, the

Bonne d'Ezee, if our memory serves us correctly. This variety had not been extensively disseminated, and consequently was but little known. It is classed as good to very good in quality, ripening from September to October. Who is to blame for this attempt to put off an old variety by giving it a new name we can not tell.

(2.) What is the character and value of the Lady Apple? It is being brought to the attention of planters just now by the tree agents, and I would like to know what is its claim, if any, to public attention.

The Lady Apple is an old variety, of French origin, that has been in cultivation in America for half a century. The fruit is very small, with a smooth glossy skin, bright yellow in the shade, but having a most brilliant red cheek on the sunny side. The flesh is white, crisp, juicy, and of a mild pleasant flavor. It is in demand during the winter, and especially during the holiday season, in the large cities, such as New York and Philadelphia, for table decoration and as a dessert fruit, on account of its small size and great beauty. When selected with care, so as to be free from all blemishes, it brings sometimes as much as fifteen dollars per barrel in New York; yet, in the writer's experience, it is very apt to be affected with the same black spots that appear on the Snow apple, which sadly mar its beauty, and make it quite unsaleable. The tree is an abundant bearer every other year.

(3.) Has the Beaconsfield Grape proved to be the same as the Champion?

We received a letter from a gentleman residing in Montreal in which he says that after testing it as grown near Montreal with samples received from Ontario, he is perfectly satisfied of its identity. We are also informed that a large number of Champion Vines were bought up about Charlotte and Rochester last spring and shipped to Montreal. Mr. L. W. Decker, whose vines Mr. Menzies claims are identical with his Beaconsfield, says, "I bought my first Champion vines in 1871, from Shanley and Gallagher. This is the same Gallagher who is now in the Beaconsfield scheme with Menzies."

(4.) Is the Champion really a valuable grape, and how does it compare in quality with the Hartford Prolific or the Concord?

In the climate of western Ontario, where the Hartford Prolific and Concord ripen well and regularly every year, the Champion will not prove to be a profitable grape, on account of its comparatively inferior quality. There are much better grapes which ripen as early, and these

will command the market. But in the more northern latitudes, where the Hartford Prolific suffers from the severity of the climate, and the heat of summer is not of sufficient duration to ripen the Concord perfectly, then the Champion may be grown with profit. Yet it seems to us that there are now coming into cultivation other early ripening sorts which are of better quality, and give promise of being equally hardy. Should these prove sufficiently hardy to endure the cold of northern Canada they will be likely to supersede the Champion, whose chief recommendation is the great hardiness of the vine and early ripening of the fruit, which sells readily in city markets when freshly gathered.

ZINNIA CULTURE.

BY CHARLES JAMES FOX, DELAWARE.

For upwards of twenty years I have grown Zinnias from seed, which was procured from James Vick, and on reading Mr. Hood's article, was induced to add my experience as a grower of Zinnias. Last year, having laid out a new garden, I had a poor sandy bank from which the top soil had been removed. A portion of it was planted with spruce, which I well mulched with good rotted manure, leaving a strip about six feet wide for shrubs. But not having time last spring the strip was left vacant, and having a lot of Zinnia plants over after planting on well prepared soil, my better half said, "Plant the bank with them." I did so, and to my surprise I never had a better show of well formed flowers, far ahead of those in a good rich border. Where the Zinnias flourished, Dahlias, Balsams, and many other flowers failed. Now the question is, if good strong plants are raised, (mine were twice transplanted,) will they not do better on a poor soil if the aspect is good, rather than on a rich soil? The latter produces growth of plant, the former the extra growth and beauty of the blossoms.

Here is a suggestion worthy of attention. Doubtless many who have given the Zinnia careful culture and just the richest bed in the flower garden have been dissatisfied because the flowers did not come up to their expectations. There is such a thing, it seems, as spoiling flowers, as well as children, by over indulgence.—ED.

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APRICOT AND NECTARINE CULTIVATION.

BY REV. R. BURNET, HAMILTON.

The Divine beneficence and munificence are marvelously patent to the least considerate, and to the dullest apprehension, if only casually dwelt upon. This assertion is a truism in regard to all His works, who created all things, and for whose pleasure all things are and were created. It is especially true in the distribution of plants. Every zone on the face of our earth has its distinctive sorts of plants, and were it not for certain wise and beneficent arrangements of Divine Providence, those plants peculiar to certain belts would be confined specially to their peculiar latitude. By means, however, the most striking and benevolent, and yet the most simple and efficacious, the growth and development of these plants are not confined to restricted and peculiar limits. The gentle gradation of one order of plants running into and growing alongside of other varieties of plants flourishing near them, and adapted to that particular habitat, can everywhere be observed. But that is not the thought we wish to present, though no unimportant thought in itself. What we wish to notice is the remarkable natural provisions that are made in creation for the growth, fructification and perfect development of plants, as it were, out of their natural habitat. This is sometimes accomplished by one means and sometimes by another. So beautiful is the provision of the All-wise, that we cannot but regard it as running strongly counter to the foolish and pernicious doctrine at present so popular and wide-spread, the doctrine of natural selection. Instead of all that is implied by natural selection, whatever that means in the philosophic language of the day, we see in it rather Divine protection—Divine care for the weakest and least protected—in establishing means and circumstances calculated to afford shelter and the means of existence for the plant, and benefit for man. These means of existence spring from natural

provisions. Sometimes a mountain range is made to do duty ; at other times a peculiarity in the strata. In the case of the western portions of Europe, and of the States on the Pacific Slope, the Gulf Stream, or a similar current, is called upon to effect the purpose. The singular and strange freaks of the isothermal lines indicate unmistakably our meaning. A plant, a vegetable, an animal, accustomed to flourish far south in a congenial clime, is made to grow and flourish in latitudes many degrees north of its original habitat. We know of few more striking manifestations of this adaptation than that shown by the width of latitude that is displayed by the growth and cultivation of the Apricot and Nectarine.

The Report of the Honorable the Commissioner of Agriculture, General Le Due, issued from the Government printing press at Washington, in the year 1879, states that "although the apricot is one of the most delicious of stone fruits, and ripens earlier than the peach, yet it is a scarce fruit in our markets, and is rarely seen on the dessert table." This is too true ; but it ought not to be true. We have cultivated both fruits in Hamilton, Ontario, for quite a number of years, and always found them succeed. They have been sure and certain croppers, and this may be justly said of the apricot. When we reflect on the fact that I have generally had apricots three weeks before a peach was in the market, it is passing strange that they should be so seldom seen on the dessert table. In our neighborhood certain conditions ensure a crop of apricots. On one occasion I was visited by a noted fruit grower, who remarked, on seeing my beautiful crop of apricots, that the trees would have done infinitely better had they been planted on the southern aspect of the house. The reply was, that that was just what I wished to avoid, and for the following reason : that had they been planted on the south side of my residence, the chances would have been that I would have had no apricots at all. The western situation was the best, because in early spring before the sun reached them the air had become so mellow that the frozen branches and sap-vessels had parted with the acquired degree of frost, and when the rays struck them there was no bursting and consequent detriment to the sap-vessels.

The Report of the Superintendent of Gardens at Washington, for this year, further says : "First, the tree is easily excited to growth in spring, and a week or two of mild weather will start the flower buds,

which are afterwards destroyed by cold or frosty weather. This is a very common occurrence north, and even south, of the Potomac, and may be measurably modified by planting on the north side of buildings or groves of trees, and thus retard the starting of the buds, and shield them from a morning sun after a cold night." The conditions for securing a good crop of apricots have been stated by us before, but we rejoice in the corroborating views contained in the present admirable Report of the Hon. the Minister of Agriculture of the United States.

There is a section of our extensive Province, however, that stands in no need of the apricot and nectarine being planted in the rear of buildings and under the protection of groves. In the neighborhood of Goderich, on Lake Huron shore, both of these varieties of fruit flourish and do well, not under the protection of buildings, but grow and fruit as freely as red or black currants, in the open, in the shape of pyramids or standards. Our attention was first directed to this fact in the garden of my friend the late Rev. Alexander Mackid, of Goderich. We afterwards found that the same condition existed over quite a considerable space on the lake shore around Goderich, and at Kincardine, still further north and west; also at Sarnia, and down by Kettle Point and Bosanquet. The secret of this successful cultivation of the apricot and nectarine lies in the fact of the modifying influence of the deep waters of Lake Huron, and also, to a considerable extent, to the remarkable stratum that crops up at the different points which we have already mentioned. At Goderich, for certain, the stratum overlies the great salt basin; the same is true at Kincardine, at Clinton, Seaforth, etc., etc., where abundant crops of grapes, pears, apricots and plums are almost always to be had. The adaptation of these different localities to the cultivation of the apricot cannot be doubted. We entertain the strongest hope that the Japan Persimmon will flourish in this portion of Ontario and elsewhere. This fall we saw the persimmon for the first time cultivated in the neighborhood of Paris, Ontario, by our veteran fruit cultivator Mr. Wm. Smith. Our experience and experiments in this culture do not enable me to say what may be the hardiness of the persimmon in our latitude. Should a hardy variety be obtained, or by naturalization from seed raising, we may find that the persimmon, like the Chinese tea plants in the Southern and midland States, may do well. We long for the time

when we may make trial of the medlar, persimmon, and tea-plant. The cultivation, and that the successful cultivation, of the apricot and nectarine is a secured fact in many parts of our Province. At Niagara they do well. I have seen them flourish without much care in the garden of the Rev. C. Campbell and of Mr. Paffard, the Mayor. All along the northern shore of Lake Erie, especially about Long Point, and the Township of Wodehouse, they can be profitably cultivated. A pretty sure index to the successful cultivation of the apricot and nectarine will be found in the growth of our Canadian forest trees. Wherever the chestnut flourishes, there the apricot does well. The chestnut is to be found from Amherstburg to Cobourg. At Kingsville, County of Essex, it is most luxuriant, and all along the northern shore of Erie, and to the above mentioned limit on Ontario, it is to be found in a thriving condition. The black walnut, butternut and buttonwood are indigenous over almost the same extent of country. Strange to say these varieties exist in a strip of country in Huron and Bruce towards Kincardine and Southampton, a clear indication to us that the peculiar strata have something to do with the growth of these valuable commercial trees. Wherever the buttonwood, walnut and chestnut flourish, there we can depend on the remunerative cultivation of the apricot and nectarine.

The varieties which we have personally cultivated are very few. We have considerable experience of the Breda and Moorpark. While the latter is undoubtedly the best apricot, we have no hesitation in saying that, as a steady and prolific cropper, there is none that we know of can compare to the Breda. It requires, however, to be thinned in its fruit. We have cultivated the Elruge nectarine, and can speak in the highest terms of this variety. We commend the Victoria. It must be said that while in point of hardiness the Breda was never known to have been injured in the parallel of Hamilton by the cold and frost, we have known the tender and late shoots of the nectarine to suffer. In our cultivation we have never attempted to protect them. They have stood, and now stand, against the west wall of the house, growing and fruiting without much or any care.

We strongly commend apricot and nectarine cultivation to our fruit growers. There are drawbacks to their cultivation. Neighbors of ours have found the curculio troublesome. A few five cent pieces to the children for his early capture, have been singularly effective in

freeing our trees from his destructive attacks. Good fruit, not of the apricot and nectarine sort merely, but all good fruit, is the result of eternal vigilance. Jarring must be had recourse to, if we are to save our stone fruit. When cultivated as standards, as I have shown they can successfully be, even in the Goderich and other districts on Lake Huron, these varieties can be cultivated and jarred as easily as is done elsewhere in the cultivation of the plum.

In regard to the market for the sale of these and similar fruits, we have no hesitation in saying, that wherever and whenever good fruit is raised by the producer, there will always be found a ready market to the husbandman.

HORTICULTURAL GOSSIP. X.

BY L. WOOLVERTON, GRIMSBY.

APPLES IN 1879.—Not long ago I saw an article in the *Globe*, stating that, as a rule, the highest latitudes of the successful growth of any staple grain constitute the region of its most profitable cultivation. This statement was applied to the wheat crop, and it was fairly shown that two-thirds of the wheat land of this continent is comprised within the Dominion of Canada. The same rule may be shown to apply to the cultivation of the apple. The southern part of Ontario is in this respect the most favored country in the world, for here the apple attains its greatest perfection both of quality and appearance. Far north of Lake Ontario the climate is too severe for many of our choicest varieties; while south of Lake Erie they ripen too early to keep well. Ontario apples have a high reputation both in Canadian and British markets, commanding the highest prices because of their superior color and keeping qualities.

But the past season has by no means added to the reputation of Ontario apples. The unusually hot autumn, especially during the month of October, made our climate similar to that of a latitude many degrees farther south. In consequence our winter apples were over-ripened, and many even began rotting on the trees; and though picked and brought inside with unusual care, packing was a most discouraging task, for after an interval of a couple of weeks it was astonishing how many culls had to be made, so many were either speckled with rot or over-ripe. I am sure that in packing I threw out at least twenty-

five barrels in a hundred, to be shipped as second class, or thrown away.

"And how are your carefully selected apples keeping this winter?" said Ignavus, the other day, with a sarcastic grin at my fastidiousness in fruit-packing.

I can't boast much of their condition. The very best specimens are poor enough now. I opened a barrel of Kings to-day (Jan. 3rd, 1880,) and they presented a shocking sight. They ought to have kept in first class condition another month at least; and as for those shipped, I fear they will not sustain the reputation of former years. A smile of satisfaction was visible on the face of Ignavus, as he says: "You will never make better out of your fruit than I did last fall. I filled up my barrels with bad and good as they came, just fixing up top and bottom a little. I took them to the depot, where they passed the buyer's inspection. I got my money, nearly as much as you, and no culls to throw away. If there is any complaint, I have the same excuse as you have,—"*A bad season—a very bad season!*"

TWO FRESH GOSSIPERS.—I wish, Mr. Editor, to make you acquainted with two other fruit growers, who, though they may not live very near either you or me, can be identified by any reader of the HORTICULTURIST possessing two eyes. Diligens is a farmer and fruit grower. He is always busy—too busy, I often tell him, to enjoy the pleasures of a life amid trees and flowers. His orchard and farm are in perfect order, and show marks of the most careful management. His trees are grouped with excellent taste, and the footpath and carriage-drive approach his house with a graceful curve.

"A landscape gardener has surely given you his advice here," said I to him one day, as I walked with him about his grounds. "No," said Diligens, "the plans are my own. I always make a study of a beautiful lawn when I see it, and then try to imitate what I admire."

Just then Negligens came along, and our conversation turned to the subject of the *peach yellows*. Negligens is one of those men who think that because they live in the country it is quite useless to spend time and money upon anything that neither puts clothes on their backs or food in their mouths. He lets the cows and horses into his door-yard to feed on his lawn grass, and save the trouble of mowing; he lets the chickens scratch up the loose sand about the sides of his house; and for a walk to the hall door you may see what anywhere else would be mistaken for a cow-path.

"One thing is certain," said I, "we need to look carefully after our peach orchards, or the yellows will destroy them. In August last I found three Early Purple trees, one Crawford and one Old Mixon bearing spotted fruit, which ripened prematurely, and I had them cut down and burned up at once, fruit and all."

"I did the same," said Diligens, "with three or four in my orchard, though they were among the very finest and largest trees I had, and were loaded with fruit. I did not believe it wise or honest to ship it."

"Pshaw!" said Negligens, "I have had the yellows in my orchard two or three years. The first case of yellows in this section was on my place. I bought the trees from a Yankee peddler. It does not trouble me very much. I have never cut down one tree, and what's more, I don't intend to."

We looked at him in surprise, and said, "You will rue it, then, for it will take every tree in your orchard."

"Guess not," said he. "Anyway, I might as well lose them one way as another. To tell the plain truth, I have made more money out of my diseased fruit than I have out of my sound fruit. I got it so early, and it is so finely colored, that it sells like hot cakes in the market for a fine big price."

We asked him how many diseased trees he had in his orchard.

"Well, I don't know exactly," was the reply. "Every year there is a few fresh ones, and if I ever begin cutting, as you have done, I am sure I do not see where it would end."

We told him that anyway he ought to cut them out for the sake of his neighbors' orchards; it was worse than letting a field of Canada thistles shower their seeds upon a neighbor's field; it was doing a greater injury.

"*You can't make me cut them out,*" said Negligens, "and I won't do it either, until they die out. I have bought them, and I mean to have my money out of them before I destroy them." And so he passed on.

We consulted together, and wished that there was a law in our country similar to that which we are informed exists in the State of Michigan, by which delinquents like this man might be compelled to cut down and burn up peach trees which are known to be diseased; and we thought that both growers and consumers of the peach would be benefitted by such a law.

SORGUM SUGARS.

BY P. E. BUCKE, OTTAWA, ONTARIO.

It may not be generally known that in 1873 the Local Legislature of Ontario passed an Act offering \$25,000 as a premium for the first successful manufacture of beet sugar; and in 1875 this Act was supplemented by another giving an additional \$7,000 annually for ten years, or a total of \$95,000 to carry out the above object. In spite of this, magnificent bonus, no one as yet has stepped forward to try and earn the premium offered.

The amount of sugars consumed in Canada is rather over than under thirty pounds *per capita*, but at this rate, at seven cents a pound, the money sent out of the country for sugar alone is \$8,400,000 per annum. It will readily be seen that if sugar can be grown and manufactured in this country, an ample market for its consumption is already established.

Repeated attempts have been made to establish beet-root sugar manufacturies in the United States, but so far the result has proved that this industry has not been a success. The Early Amber Sugar Cane appears to have solved the difficulty found in procuring a sugar plant for the more northern parts of this continent, where the short warm seasons require a plant adapted to our climate, and a plant also from which the saccharine matter can be extracted with little manual labor—a great desideratum in a country where wages are so high.

In a former article on this subject, it was recommended that "Early Amber" should be planted four feet apart each way; but on consulting other authorities, I find that to obtain the greatest yield per acre, the distance apart advised is three feet between the rows, and twenty inches between the hills. This would give space to cultivate "crossways" with a light cultivator and a single horse, a couple of times before the plant was high enough to cover the ground; or a cultivator might be constructed so as to take three cross-rows at a time, in which case sheet-iron guards would be necessary, so that the soil would not be thrown on the growing crop. Each hill should have from two to four plants, and the weight of trimmed cane per hill would be from two to eight pounds, but an average of three pounds per hill would give 11,700 per acre, which would make 180 gallons of dense syrup, or 1,800 pounds of crystalizable sugar and 44 gallons

of drainage molasses. But this is quite a low average. Under good cultivation, with a fine, rich, friable soil, and every attention to the destruction of weeds, etc., it is quite possible to add a quarter more to the above figures, or 2,400 lbs. sugar and 55 gallons molasses.

It appears from experiments made, an average of five pounds of stem have been raised to the hill, which will give 270 gallons of dense syrup, or 3,000 pounds of sugar and 66 gallons of molasses. This experiment was made on ground that would yield 100 bushels of corn per acre; or if beets were grown and well cared for, they would yield about the same amount of sugar.

Every cultivator will readily understand that preparation of soil and attention to the crop makes a vast difference in the yield. In Europe, where the sugar beet is grown, the highest attainable amount of sugar raised per acre is 5000 pounds, but the average in France is only 1,071 pounds; whereas the average from sorgum ought to be 1,800 pounds, or very little below that amount.

In my hastily written article in the January number, it was recommended that the cane should be left to ripen in the field for some days after being cut. I find also this is a mistake, as deterioration begins within a few hours after the crop is cut, and the sooner the stalks can be worked up after the cane is removed from the ground the more readily will the juice crystalize.

One reason why sorgum is superior to the beet is, that it has a far wider climatic range of growth. It has often been noticed by strawberry growers that a drought takes place towards the end of June. This dry season is almost fatal to the beet crop—hot, dry weather rendering its juices thin and insipid, and almost entirely devoid of saccharine matter. On the contrary, hardly any amount of drought affects the sorgum plant, and it readily stands the summer heat as far south as Texas. Neither heat nor drought appear to weaken its juices in sugar-making material.

WHAT COULD HAVE BEEN DONE MORE TO MY VINEYARD?

BY A. HOOD, BARRIE, ONT.

In the December number is an article from the pen of Mr. J. Croil, of Aultsville, complaining that he gets worse results from his orchard, with the best of care and cultivation, than does his neighbor

under precisely opposite conditions. His complaint is more particularly with respect to black spots, or fungus, in the Snow Apple; but this is not the only point in which his fortunate neighbor fares better than himself, for he says this neighbor "gets finer fruit and more of it," a result of course very discouraging to one who has done all that he knows how to do for the benefit of his young orchard; and appears to be so contrary to all that we should be led to expect, that it becomes particularly interesting to enquire further as to the cause.

Mr. Croil informs us that his trees are planted thirty feet apart; that he has carefully cultivated the ground since planting; that he has given repeated heavy dressings of ashes and barn-yard manure, and pruned regularly every June. His neighbor had not applied lime, ashes, or any other fertilizer for years; his trees were planted at less than half the usual distances; they were mostly growing in sod, and were rarely pruned. Both orchards were planted about the same time—say, ten years ago.

These are the conditions as given by your contributor; but he has not told us whether the trees are standard or half standard; nor what kind of soil and subsoil they are growing on, which it is highly important should be known, and particularly as to whether either of the subsoils may be considered springy. I have an idea that the successful growth of fruit trees depends more on the subsoil than on any other one thing that can be mentioned; and it would be interesting to know whether it is any defect of that kind that has affected Mr. Croil's trees. But he says his trees are thrifty. Perhaps they are too much so, and perhaps his neighbor's are the reverse.

It is found that any cause or treatment that attacks the life of a tree, such as root-pruning, &c., tends also to make it produce fruit. Mr. Croil's neighbor has seeded his orchard down, which is a very effective way of attacking the life of young trees; and perhaps it has for the time induced them to grow fruit; but if so, it is like killing the goose that lays the golden eggs, as will be found out before the trees are double their present age. On the other hand, his own trees have, perhaps, been making an extraordinary growth of wood, during which, of course, they could not be expected to produce a great deal of fruit.

As regards the distance the trees are planted apart, I consider that during the first ten or fifteen years, they would do better at fifteen than thirty feet, although that would of course be too near for a full-

grown orchard. I am not, however, in favor of scattering trees over too much ground, and intend planting trees myself in the spring at 18 by 24 feet.

I must say it is a mystery to me how trees seeded down, especially when young, manage to live at all. It appears almost impossible that any moisture should ever reach their roots, during the summer, through a thick sod, for the grass and grass-roots will intercept every drop of rain that falls, no matter how fast it comes down, and ground as dry as dust can be found at any time during summer by simply turning up a spadeful of sod; but trees do grow under such conditions, and produce good crops of fruit too; and I sometimes feel quite annoyed at them for doing so, because it upsets all my theories of what are the best conditions for fruit growing. Perhaps I should not have said "upsets all my theories," because in order to do that it would be necessary to show that as good results can be obtained under sod as under cultivation; and *that*, at the present time, I beg leave to doubt; but the difference in favor of cultivation, as far as I can learn, is not as great as I would have expected it to be.

Any person who has had any experience in gardening must have observed the enormous difference it makes to flowers, fruits or vegetables, whether a crop of weeds is allowed to grow up with them or not; and the same effect may be noticed in regard to shrubs, bushes, hedge-plants, and young trees of any kind. Why, then, should not full-grown trees suffer in the same degree? I am inclined to think they do, but the effect is not so plain to be seen. I am inclined to think that trees under sod make a very slow growth, although they may produce fruit.

I hope Mr. Croil will ferret out the cause of his ill-success; that he will learn "what more could have been done for his orchard," and let the readers of the HORTICULTURIST know it.

ABOUT ZINNIA CULTURE.

BY J. MCAINSH, ST. MARYS.

I notice that two correspondents of the HORTICULTURIST in giving their experience on cultivating the Zinnia have come to the conclusion that the best way to have good flowers is to raise them on poor soil.

As I have grown the Zinnia for a number of years, I will also give my experience. Now, I have found the seed of the Zinnia to be very variable in quality. Plants raised from seed saved from the same plant have produced flowers, some of which were as fine and beautiful as ever I saw, while others were poor, worthless things. And I have observed the same thing both in imported seed and seed of my own growing. If there is Zinnia seed which will uniformly give good flowers, without any mixture of poor, worthless ones, I have never had any of it. The best Zinnias which I ever raised—and I have raised some very fine ones—were grown in deep, rich soil, well cultivated, and occasionally watered with soap suds. In my experience, the only difference between rich and poor soil is, the rich soil, as a matter of course, produces larger plants, and consequently more flowers. My practice is, when the plants begin to flower, to pull up and destroy those which produce only poor flowers.

FIG CULTURE AT THE NORTH A SUCCESS.

BY G. F. NEEDHAM, WASHINGTON, D. C.

To demonstrate the entire practicability of fig culture in these climates, I place on record two letters. The first is from my revered instructor, Gen. Worthington, who for fifty years has been the pioneer fig culturist of the north. He says:—

“G. F. NEEDHAM, ESQ.,

“Dear Sir: * * * Fresh figs have for many years constituted an important part of my summer and autumn diet, and I am glad that the propagation and dissemination of this fine old fruit is in such good and zealous hands as yours, for I am too old to do much in what I consider the good cause of growing semi-tropical fruits cheaply in our climate, though I know *that it will be done* sooner or later. So I cheerfully hand over the business to other and younger hands.”

“Very respectfully,

“*Chilicothe, O., 1879.*

“JAS. T. WORTHINGTON.”

The second letter is from a competent and disinterested witness, the manager of John Hopkins' estate, near Baltimore.

CLIFTON GARDEN, BALTIMORE Co., 23rd October, 1879.

“DEAR SIR:—I have read your pamphlet, “Fig Culture,” etc., with much interest, and I fully endorse the instructions you give. I have no doubt but that your expectations about the general culture of the fig will be realized. I have grown figs here over twenty years, without missing a crop; and the demand for them (at \$10 per bushel, N.) is far beyond the supply.”

“Yours truly,

“WILLIAM FOWLER.”

FUNGUS ON THE SNOW APPLE.

BY JOHN CROIL, AULTSVILLE.

In the December number of the HORTICULTURIST I asked advice on the above from our members and the Editor. He is too polite a man to leave my lines unanswered, (nor did he), but why he did not give us all the benefit on his sheet I am at a loss to say, unless it be from his known modesty, or from want of space. We ask him, however, to overcome both difficulties in a matter to us of much importance. Condensed, I give his reply.

"I have been acquainted with the black fungus spot on the Snow Apple for many years, and am obliged to say that it is not confined to that apple. It is also very bad on the Fall Pippin, and worse on the White Doyenne Pear. When the fruit thus affected is gathered into barrels, the spots begin to decay, (or cause decay, I should say), in the fruit, and soon the whole barrel is gone. I cannot tell why it appears very bad in some orchards and omits another near by, nor why in some seasons it is very bad, and then disappears in a great measure another season. I cannot see that care or neglect have anything to do with it. Did we know why this fungus attacks our fruit—that it was because of some deficiency in the soil, or improper exposure to heat or cold, too much or too little sunshine—we might apply some remedy. I have thought that I could see that trees not fully in the sun and air were more badly spotted than others, yet I do not feel quite sure even of this. The Snow Apple was not in my boyhood so badly spotted as now, nor was the White Doyenne Pear."

(Signed), "D. W. BEADLE."

After receipt of the above, I sent a similar request to the Montreal Horticultural Society, and received from them the reply that they would give attention to it.

The following I received from Mr. N. C. Fisk, President of the Fruit Growers' Association of Abbotsford:

"Yours of 26th November to Mr. Evans was sent by him to Mr. Morgan, of Montreal, and by him to Mr. C. Gibb, Corresponding Secretary of the Abbotsford Fruit Growers' Association, and by him to me, requesting me to answer it. I did not see the apples, but by what Mr. Gibb said, and Mr. Beadle's letter, I would infer that it is the black spot or fungus on the apple, especially on the Fameuse or Snow Apple, that you want information about. I see by Mr. Beadle's letter that he is somewhat puzzled about it, and so have we been for some time. Some years Fameuse are worthless, other years free from spots, fine and large. We have come to the conclusion that it depends on June weather. If the weather is then cold, and rainy the apples are sure to be spotted. Some orchards are affected more than others, and some trees more than others. Orchards most affected with the blight are usually those in low ground, with heavy foliage, and perhaps thickly planted. This goes to prove the disease is caused by damp and cold, want of air and sunshine. In the same

orchard usually those most troubled with blight are most sheltered, and have the heaviest foliage; and usually more blight is on limbs nearest the ground, and where there is the least circulation of air. The only remedy I know of is thorough pruning. Have a good open top, let plenty of air in, and give the sun a chance; then if we do not get too much wet and cold we have little or no black spots or fungus."

(Signed), "N. C. FISK,

"President of the Fruit Growers' Association of Abbotsford."

Both of the above letters are satisfactory, as agreeing in many points. Thorough and regular pruning however has not saved me; nor am I, like Mr. Beadle, sure that the most sheltered trees suffer most. Some of my worst specimens were on young, thrifty trees, standing thirty feet apart, and away from other shelter. A writer in the *Albany Cultivator* attributes the disease to a wet sub-soil or an excess of manure.

APPLES FOR THE MILLION.

BY REV. R. BURNET, HAMILTON.

It may interest, and indeed may benefit, our fruit producers to learn what varieties of apples are most esteemed by the public. The question might arise, How are we to attain to such knowledge? An answer is not so easily given as asked. Lately we have put two or three "irons in the fire" to enable us intelligently to make a satisfactory reply. Dining at the Queen's Hotel, Toronto, at the special invitation of the worthy President of the Agricultural Board of the Province, we were struck with the soundness and flavor of the Ben Davis. The thought of enquiring what varieties were most sought after to meet the varied tastes of the guests of the house occurred to us, and we hasten to lay the information before our fruit producers.

Mr. M. H. Irish, of the Rossin House, Toronto, Ontario, says, in an interesting communication which he made to me, "If there is one thing that gives me more trouble than another, it is to get good fruit for table use." This assertion is rather humiliating to us as fruit growers. We have been indulging the thought and cherishing the hope that as the Province was notably adapted for fruit raising, and as numerous varieties were cultivated, we were in a position to meet all reasonable demands; yet Mr. Irish affirms, that "If there is one thing that gives him more trouble than another, it is to get good fruit

for table use." The statement made is calculated to furnish many important lessons, and to give direction and an impetus to a special cultivation of the apple for table use. It is evident we must enter upon the path of specialties. Every fruit grower has been intent in the past of gratifying his own peculiar taste, and making that the criterion of his productions raised for market purposes. A greater breadth of view must be exercised, and public taste must enter as a factor into our future fruit productions.

Mr. Irish happily makes a suggestion which cannot fail to bear fruit. He further says, that "The Snow Apple, in its season, is the only good apple I really have been able to procure." This testimony to the value of the Fameuse is not to be overlooked. It is an A 1 Apple. But it is sad to think that only one variety out of the multiplicity of good varieties has been singled out by Mr. Irish as worthy of commendation and remark. The Snow Apple is a splendid variety. In the Montreal district on railroads and in hotels it is *the* apple—almost the only apple offered to the public. Mr. Irish continues and says, "The Spitzenburg and Rhode Island Greening are my favorite cooking apples." It is commonly said that "Murder will out;" in like manner we say, "Excellence will tell." A line will comprise what is to be said of the *Æsopus* Spitzenburg—best to eat and best to cook. Of the Rhode Island Greening—best to cook, best to eat, best to keep, and best to carry. Mr. Irish gives me a Roland for my Oliver, and asks, "If you can suggest better varieties I shall feel exceedingly obliged to you." Here is a chance for our horticulturists. Who is ready to make suggestions in the shape of better varieties? As good may be found; which are they?

From the Queen's Hotel, Toronto, we learn from the courteous clerk, Mr. Richmond, that in that establishment they use, in the months of September and October, the St. Lawrence and Snow Apple. The St. Lawrence is a showy, nice apple, a general favorite, and most worthy of public appreciation. The Snow takes first place again, as it is justly entitled to, and maintains its enviable preeminence.

Mr. Richmond writes that after these dates "we use the Northern Spy, Pomme Grise, and Rhode Island Greening." This informant does not draw the distinction between dessert and cooking varieties. In fact sometimes they are used equally for both purposes, and with equal advantage. We have sometimes thought that the size of the

Northern Spy takes it out of the category of dessert fruit, though its quality, and especially at this season, places it in that list. The Pomme Grise is the *beau ideal* of dessert fruit. People as a rule don't wish to eat a pound weight of fruit after making a hearty dinner. It astonishes us not a little that the American Golden Russet finds no place among these public favorites. The American Golden Russet, of Western New York, is an apple to be placed in the fore-rank of the best apples. It is one of the most delicious and tender apples, its flesh resembling more in texture that of a buttery pear than that of an ordinary apple. Autumn Rose is another rich, juicy, tender, high flavored apple, that ought from its admitted excellence to attain to public favor. Ben Davis has already been noticed. To us it appears a most desirable fruit for dessert purposes. Benoni only requires to be known to be appreciated. Few apples known to us are more likely to meet with public approbation. The Domine, excellent from December till April, is an apple exceedingly tender and juicy, with a pleasant sprightly flavor.

No finer apple for dessert grows than the Dyer or Pomme Royale. It is little known, but where known is known only to be highly esteemed. The Newtown Pippin is an apple admirably adapted for all the purposes of dessert as well as cooking. The same may be said of Grimes' Golden Pippin. What is true of the last two varieties is equally true of the Jonathan. The Lady Apple is an established dessert variety, and has a universal reputation for its goodness. It is as showy as well as a good fruit, and well worthy of cultivation for dessert. Were it known, the Mother Apple would take a foremost place on the dessert table. The flesh is tender, rich, juicy and aromatic. Its season prevails fully over four months, commencing in November. A companion apple to the above is the Primate, and is prime from the end of August to the end of October.

Mr. Irish would find his query superbly answered for the month of August by investing in the Summer Rose. Last, but not least, is the Wagener; a very delicate apple, which bridges over the season from November to February. The Wealthy, and Westfield Seek-no-Further, concludes our recommendation of dessert fruit for public tables.

What will be found acceptable by the public in economic use in hotels, will be found equally well suited to adorn and grace the private tables of the general public.

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[No. 3,

CANE SUGAR. No. 3.

BY P. E. BUCKE, OTTAWA, ONTARIO.

Having grown the cane, the next thing is to proceed to make the sugar. It is found, as I before stated, that the storing of cane for any length of time after it has been cut is highly detrimental to the crystalization of the syrup; therefore in order to prevent failure, it should be insisted upon as a general rule that the stalks should be worked up within twenty-four hours after being cut in the field. All the operations of cutting, blading, topping, removal from the field, extraction of the juice, defecation, evaporation and crystalization, should follow each other with the least possible loss of time, as in every stage any delay will cause a proportionate loss to the manufacturer. The only point at which the operation can rest after the cane has been cut, is when the syrup has reached a density of 25° Baume. It will therefore be seen that shed room need not be provided for more cane than can be used up in a single day.

It is not desirable that the crushing mill should work at a too high rate of speed. The best results appear to be obtained by rollers which develop a surface of from four to five yards per minute, so that a roller of two feet in diameter should make about two to two and a half feet per minute. An increase in the capacity of the mill can only be given by adding to the length of the rollers. It is found by analysis that fresh undried canes contain eighty-five per cent. of saccharine juice, but as a rule only from fifty to sixty per cent. is extracted. So great a loss throws open a wide field for some inventive genius, to discover either a more perfect mill, or some new method of extracting the saccharine matter from the cane. An increased yield of syrup may be obtained by running the canes through the mill a second time. The mill should be placed so high that the juice may drain from it by

a pipe into the defecating tanks, and from there into the evaporating pans. A strainer of wire gauze should be so placed that the particles of pith and cane may not be allowed to run into the tanks.

Two heating tanks, each of a capacity of a hundred gallons, to be used alternately, should be prepared to receive the juice as it flows from the tank at the mill; and these should be so situated that the juice may be let out of them into a cooling tank, which may be made of two inch plank, and of sufficient capacity to hold as much as the other two. The evaporating tanks may be made entirely of metal, or the bottom may be of sheet copper, and the sides of wood. These should be placed over a separate flue of a furnace, or, what is perhaps better, be heated by a steam coil or jacket arranged so that the steam may be turned off when the scum has formed on the surface. If however an open fire is employed, an arrangement should be made so that the heat could be turned off into another flue when the proper temperature is reached. The heaters should be of such a capacity that they will contain all the juice received from the mill in an hour.

The evaporator may be of any capacity or shape, provided a thin sheet of juice is spread over a large even surface, with a continual descent; but it must be so arranged that the scum, which forms immediately the juice enters, may be easily removed. Sometimes an endeavor is made to finish the sugaring off process in this pan, but it is best to have a separate furnace with a finishing pan attached; or if a steam jacket is used in the other tanks, it is only necessary to have one for this process also. Steam is found to be decidedly the best heat to use, as it is more under control, and not so liable to injure the sugar. The coolers, of which there should be two, into which the finishing pan discharges, should be close jointed wooden troughs, broad and flat, and large enough to contain a day's boiling; these may each be used on alternate days.

The crystalizing vessels may be tubs or half barrels, with plugs in the bottoms which may be easily removed, to secure drainage; these must be kept in a room of 80° or 90° fahrenheit. They should be placed so that they will drain into some convenient vessel to catch the molasses.

The necessary apparatus above described is in use in many of the neighboring States, from whence either they, or patterns of them, could be procured. One of our members who is going into the

experimental cultivation of the cane here, informs me that he expects to visit the Western States next autumn, and bring with him some utensils for the prosecution of this industry, and at the same time gain such a practical knowledge of the system there employed as will enable him to direct the operation of sugar making on his own farm.

An acre of sorgum will give from two hundred to three hundred gallons of syrup, so that the capacity of the apparatus employed should be gaged by the area sown.

NEW CHERRY, "*NE PLUS ULTRA*," THE UTTERMOST POINT.

BY CHARLES ARNOLD, PARIS, ONT.

Some four or five years ago our venerable friend and fruit grower, Mr. John Mosely, of Goderich, sent me prepaid a small box of cherries, with the above latin phrase as the name. After reading over the name and examining the fruit very critically, I of course wrote a letter to friend Mosely, thanking him kindly for the fruit, and for his kind offer to send me scions. The whole family tasted the fruit, and pronounced it "not bad," with a strong resemblance to Napoleon Bigarreau, but smaller, and in no way superior to it. Again looking at the name, I exclaimed, "What! the uttermost point of perfection? Never. '*Ne Plus Ultra*.' Nonsense." A few of the cherries were again tasted, and the rest left in the basket in which they were sent without further notice for near a week. The cherries at this time, and for several days after, were perfectly sound, while all varieties of cherries with me, including Napoleon, rotted; the half of them after being picked only a few hours, and some of them rotted upon the tree. The *Ne Plus Ultra* was again tasted, and pronounced "good." This cherry was but little more thought of until the next spring, when Mr. Mosely kindly sent me (unsolicited) a few grafts. The grafts were immediately used; three or four of them grew, and last year one of them bore fruit. The only thing remarkable about these cherries up to their time of ripening, was their manner of growth. The fruit did not, like most other cherries, grow in large clusters on strong spurs, but singly or in pairs, along the last year's or the previous year's branch, upon very small spurs, and in some instances upon no spurs at all.

But the ripening season again comes round. The fruit of all others is again gathered; much of it rots shortly after being gathered, and some of it rots upon the tree before it is ripe. Our attention is again called to *Ne Plus Ultra*, which still hangs upon the tree, perfectly ripe and perfectly sound, and is now pronounced "very good."

Now, Mr. Editor, I have a kind of dreamy premonition that some others of the Directors of the Fruit Growers' Association, and perhaps yourself, sir, had the *Ne Plus Ultra* cherry sent to them. And I sincerely hope that no one has even whispered to himself naughty words about an excellent fruit because he did not like the name, as I begin to fear that I have done. And to make amends for not giving Mr. Mosely credit for producing what I now believe to be a great acquisition to our cherries, I will promise that if after another year's fruiting this cherry shall resist the rot, and all other cherries shall be injured by it, I will freely join friend Mosely in loudly proclaiming its praises. And if our friend is still desirous of using a latin phrase, I will join him in saying "*Optimates*," (of the first rank), or any other name that he chooses that shall express this meaning; but I do sincerely hope, that until the millenium shall come, no one will venture to name a fruit *Ne Plus Ultra*, because it is doubtful if fruit or anything else will attain perfection before that time.

The Editor did not have the pleasure of seeing Mr. Mosely's cherry, and hopes, if they both live until next cherry season, that Mr. Arnold will favor him with a small sample.—ED.]

THE ENGLISH SPARROW.

BY J. NEWHALL, TORONTO.

I have always been a great advocate of the English Sparrow, and have had many notices published for their benefit. My wife has been feeding them regularly, sweeping the snow away first when necessary, and many citizens of Toronto I know have treated them similarly, and now we have thousands chirping all over the city. Now it so happens that I have a red currant patch of about a dozen bushes, and I noticed that the sparrows paid a great deal of attention to them lately. Being curious to know what they were doing, I went to investigate. Lo! a

change comes over the spirit of my dream, for what was my consternation on finding every bush entirely denuded of every fruit bud, as clean as if they had been rubbed down with leather-gloved hands. Not a bud left! On further investigation I found my Glass' Seedling Plum nearly stripped of every bud also, and a Mayduke Cherry considerably damaged. I am not an alarmist, but am satisfied that if the English Sparrow increases in the same ratio the next three years that it has for the last three years, no one here need attempt to grow small fruits. I therefore think that this is a fit subject for the consideration of the Fruit Growers' Association. I shall be happy to have any member examine my garden, at No. 21 Caer Howell Street.

CORRESPONDENCE.

Jonas Neff, of Port Colborne, writes that the Wagener Apple has not done well with him; it is scabby and knotty. The apple crop was below an average, except the Early Harvest and Red Astrachan, which yielded more than usual. The Codlin Moth injured more than two-thirds of his apple crop the past season. He mentions hearing the Whippoorwill on the evening of the fifteenth of March last, a very unusual occurrence, the bird usually migrating early in the fall and returning late in the spring. He further says:—

* * * "The grub of May-bug, (*Phyllophaga quercina*), appeared in countless millions, causing acres of pasture land to look like fallow ground. I had two acres of corn from which I harvested forty bushels of ears. Clover, wheat, potatoes, turnips and strawberry plants shared the same fate. I know of but two animals that feed on this grub, the skunk and the hog. The Robins and Yellow-winged Woodpeckers congregate in flocks on the fields where the grubs are; they turn their heads close to the ground, then straighten up, cut a small hole through the sod and pull out the grub. The Robin is a very much abused bird by fruit growers generally."

FRUITS IN ALGOMA.

We have received a letter from Mr. W. Warnock, renewing his subscription to the Association, and stating that he has changed his residence from Gorrie to Blind River, Algoma. He says:—

* * * "I am sorry that I have not yet been of any benefit to the Association, but I hope that I may be able to do something in return for all the valuable information I get from the CANADIAN HORTICULTURIST and the Annual Report. There were no fruit trees planted on this the north shore of the Georgian Bay by the first settlers, but there are a few who planted some last year, and they have made a fine growth this

summer; and I am satisfied, so far as my experience goes, that we can grow all the hardy apples and some pears. I am forty miles east of Bruce mines, and have explored all the Townships between. They are all filling up very fast with settlers, and in a few years the question of whether fruit can be grown here or not will be settled. I am living in the Township of Gladstone, which has just been surveyed the past summer. I am in the valley of the Missisaga River. We have no wild grapes in this region, and very few plums. I do not believe that the plum tree will do well here, for I see the wild red cherry struggling to make a growth, but it is stricken with black-knot when a mere bush in every case; but strawberries, red raspberries, whortleberries and cranberries abound. The latter are gathered from the marshes in great quantities by the Indians, and sold at Blind River and other places, where they are barreled up and shipped away, to the great profit of the trader. All these berries are a sure crop every year."

THE DIADEM RASPBERRY, AND NO. 40 STRAWBERRY.

Mr. G. Wilgress, of Cobourg, writes:—

"I hope I shall like the new Saunders' Hybrid Raspberry better than the Diadem received two years ago. The fruit was small and poor, though sweet, pink color, and no great bearer; the canes were rather stunted in height, with many side branches, rough or prickly all over. The strawberry No. 40, received at the same time, did not spread much. The fruit was of fair size, wedge shape, but of no flavor at all. In my opinion they were neither of them worth keeping in the garden at all."

THE D. B. HOOVER APPLE.

We have received a medium sized red apple from Mr. D. B. Hoover, of very pleasant flavor and tender flesh, which we think will rank from "very good" to "best." He says of it:—

"When I first, after leaving my babyhood, saw this tree, it was a good sized bearing tree, and it has borne its fifty or more crops of apples in our twenty-five-miles-north-of-Toronto climate. This tree has always been exceedingly healthy until a few years ago, when there was a kind of black bark blight on the limbs of our apple trees, which also killed a few limbs on this tree, but it is now reviving again. I hardly know what to make of you nurserymen. I had the privilege not more than a year ago to take an agent from a nursery through my old ragged orchard, just when apples were full grown. I showed him my favorite, which pleased him so much that he asked me for a sample of these beautiful winter apples to show to his boss, which I gave him very liberally; he thanked me for them, and off he went. After the season of the apples he got from me had gone past, my friendly agent came back again, stating that his boss liked my favorite apples so well that he would like to have about two hundred grafts to put on some of his old trees for trial, and that they would give me in exchange grafts of any of their stock, if I would make a list of what kinds I wanted, and he himself would put in some new kinds for me which were not in their catalogue. This settled the agreement on the graft exchange. I went to work and cut for him a bundle of splendid scions, and sent them to the place where I was directed, and where he afterwards received them. I also sent with the bundle of grafts my list, with my address, for a few grafts to lengthen out my fruit season, but

up to this minute I have not seen any grafts from the friendly agent's boss. All I received from them was "much obliged!" This was not a Yankee trick, but a Canadian. No doubt this nurseryman will soon have any amount of trees to sell that he will now raise from the grafts I sent him, without having given me one cent for my trouble."

SALEM GRAPE.—CLAPP'S FAVORITE AND GOODALE PEARS.

Samuel Hunter, Scotland, County of Brant, writes:—

"I like the Salem Grape, although not as hardy nor productive as the Concord, yet larger and better flavored. I had about a peck of pears from off my Clapp's Favorite tree. Fruit not as good as the Flemish Beauty, nor near so large, but early. I had one pear from off my Goodale tree gathered before frost, and eaten December 4th. I consider it very good. I am glad for myself, and others that I meet with occasionally, that you have decided to send us a raspberry this year."

THE WINTER GARDEN.

BY JAMES MACPHERSON.

I am pleased to observe that the term "Winter Garden" is employed in British America in its proper sense, and that it here means a garden for the preservation and growth of plants and flowers, and not a mere shamble for the exhibition of athletes and the sale of lager beer. During the long Canadian winter, there are few things more calculated to afford a high degree of refined pleasure than a properly managed conservatory of flowering plants, whether it be large or small. It is one of the most common complaints of housekeepers that they cannot keep their plants in health in their living rooms. How easy it would be for such to contrive glazed porches, or bay windows isolated from the room by folding doors, and having a glazed instead of an opaque roof. An independent heating apparatus, or a coil from the furnace, (where employed), could quite easily be arranged, and a collection of plants from any zone kept in perfect safety from frost, while the necessary humidity could be maintained without inconvenience to the family. Even without artificial heat such a glazed porch could be kept cheerful with the broad leaved evergreens from the colder portions of the warm tempered zone. For instance, the Ivies, Hollies, Viburnums, Bays, Laurels, Aucubas, *Daphne laureola*, *Ulex*, *Genistas*, *Rhododendron catawbiense* vars,

Mahonias, Ruscus, Buxus, Cotoneasters, and a host of similar plants hardly in Great Britain, would be perfectly safe in such a structure, in localities where its temperature would not fall below say 20° Fahrenheit.

For those who would afford some means of heating, a far greater choice of material would be available. The following plants of the warm temperate regions could be kept in perfection in such structures with a night minimum of 45° to 50° fahrenheit, always raising by day from 60° to 70° with sunshine. The possessor of such a window might easily keep it gay all winter at an outlay of from three to four dollars per month, if judiciously expended in such plants as the following :

October.—Begonias, Plumbagos, Geraniums, Mesembryanthemums, Oxalis and Roses.

November.—Bouvardias, Chrysanthemums, Jasminums, Salvias, Abutilons, Crassulas.

December.—Chimonanthus, Oleas, Cupheas, Hibiscus, Heliotropes, Veltheimias.

January.—Richardias, Camellias, Begonias, Primulas, Siphocampylos, Salvias.

February.—Cyclamens, Lopezias, Callas, Ornithogalums, Fuchsias, Ageratums.

March.—Cinerarias, Hyacinths, Crocus, Geraniums, Azaleas, Ixias.

The above plants, with the single exception of the Camellia, are rapidly and cheaply produced, and might readily be sold in good blooming size at from twenty-five to seventy-five cents each. The object should be to teach the public how to keep them in fair condition when produced.

BENEFITS RECEIVED.

C. J. Fox, of Delaware, writes :—

“Enclosed find four dollars, subscriptions for the Fruit Growers’ Association. I am only sorry I cannot now send more, but I will still see what I can do ; but if every old member would add three to the list it would help some. I consider the benefits received by the members to be ten-fold.”

RANDOM RASPBERRY NOTES.

BY T. C. ROBINSON, OWEN SOUND.

I have not given the raspberry a fair trial, and so place little value on my experience as a test of the value of the berry as a market crop. But I have had a partial trial of a good many varieties of this delicious small fruit, and as my experience of the relative value of these varieties may be of some assistance to those who seek for something better than the commonest kind, I give it for what it is worth.

Varieties of the raspberry as well as of the strawberry can readily be had that will grow on any kind of soil, and will, with or without any kind of culture, produce a supply for the family that will be a welcome innovation on a diet of unmitigated pork and potatoes, so that no man who owns a rod of land has any excuse for being without these natural preventatives of disease. But if any man thinks to grow either raspberries or strawberries without manure on land so poor that it will scarcely sprout white beans, and hopes to make money by selling the crop, he has got a hard row to hoe. My land was not so bad as that, but it was decidedly too sandy for success without abundance of manure; and without experience, as I was, it took several seasons, with their attendant bitter lessons, to awaken me to the fact that I must fertilize the ground or give up the idea of profits.

Starting on this sandy soil with the Wilson Strawberry and the Philadelphia and Franconia Raspberries, I set out to find by experiment varieties as productive as the first two, and at the same time possessing greater advantage as to size, color and flavor. Of course I have not succeeded as yet, and may never do so. Nature is not given to combining all possible excellencies, either in individuals, or articles in the vegetable world, but the search is as fascinating as ever, and I hope before long to find a variety of raspberry much ahead of the Philadelphia for market.

Among the first that I tried was the Turner. I am very fond of this fruit. Of fine bright color, good flavor, excellent bearing qualities, with the plant as hardy as I desire, it makes quite an effort to "fill the bill." It seems to be about the size of the Philadelphia, but looks a little tame beside Franconia; besides, it is not much firmer than the Philadelphia, and is considered behind that old standby in

productiveness, though it seems to excel Franconia in this particular. It has not the high flavor of the Clarke, but it is as sweet or sweeter, with a refreshing "smack" to it that used to tempt me to be late for dinner oftener than any other bush on my grounds. Some Turners we preserved retained their shape in the jar beautifully. Ladies, is this common with preserves of this fruit?

Highland Hardy is another of my old pets. The bush is not so stocky as the Turner. It has a tendency to grow tall and spindling on my soil, which I divert by pinching when between two and three feet high. The winter seems to have no effect on the crop, and the first pickings come in before my strawberries are all gone. Perhaps it is this prime quality of earliness that makes this berry seem of better flavor to me than many fruit growers assign it; at any rate it tastes very good. The fruit is about the size of the Turner, and resembles in appearance and firmness poorly grown Franconias, but is sweeter. The crop is not so large as the Turner I think, but from its firmness and earliness it may prove a valuable market variety, and I have set out quite a patch.

Brandywine fell into speedy neglect with me. The poor quality of the few berries I got, and its low reputation for flavor, led me to let it choke with weeds.

Knevet's Giant ought to be a formidable rival of the Clarke for the first place in the amateur's garden. I only got four or five plants of this variety to try them, and as soon as I realized how good they were I cut the roots up badly for new plants, and when well grown again a passing wagon broke them down, so that I have had no fair chance to test the productiveness on two year old plants. The berry is very fine, larger apparently than Franconia, with frequent tendency to grow double; not quite so sweet as Clarke perhaps, but with something of the same refreshing taste which I noticed in Turner. Too soft for market, and not any hardier than Clarke.

But I must not forget E. P. Roe's Pride of the Hudson. Having only nine plants, which cost half a dollar each, I put them on better soil, and set to work to pet them with applications of home made superphosphate, wood ashes, &c., hoping to get a lot of young plants to set out a large patch, and have a good taste of the berries too. I got the suckers indeed, and so of course weakened the bearing plants, and did not give them anything like a fair chance to show what they

could do. The berries were certainly very large and bright colored, and, considering circumstances, a good many of them; but the quality was not so good as I had expected. The bushes too have not grown so well as I think they ought to have done since cutting away the old canes; and altogether, while I shall watch the Pride of the Hudson with much interest during the coming season, I cannot help expecting it will only prove valuable as an experience. It seems hardy.

But I had not, and have not, lost faith in the originator of the above doubtful variety—a faith confirmed by many previous trials of other plants from him, and so, on his recommendation, I made a larger investment in the Cuthbert, and also in that new and much lauded blackcap the Gregg. These are both growing finely, and I got a berry or two from the Cuthbert that gave considerable promise as to flavor.

Clarke, Franconia, and Philadelphia ought to be noted in this article, not for the sake of giving information, but by way of comparison. The first is a fine home berry, rich in flavor, large in size, and vigorous and productive as to plant, but soft, and not hardy enough. The second is the finest market berry I can raise, *considered in the crate*; large, firm, and bright colored. But it does not bear well enough to “fill the bill,” and I want a sweeter berry. It winter-kills sometimes. The Philadelphia everybody relies on for quantity and hardiness, but in nothing else does it come up to the standard.

If one were to ask me which I considered to be the best market berry out of those I had tested, I should reply, Don't depend on one kind, plant Highland Hardy for early, and Franconia for late, if your climate is mild; if your climate is severe, put in Highland Hardy and Turner, as the last named appears to be the hardiest in cultivation. For home use I recommend the above list, with Clarke substituted for Franconia.

In point of earliness, Highland Hardy comes in a week before any of the others. Then follows Turner, although it yields a few stray berries almost as soon as the first. Nearly a week after Turner all the others come in. Highland Hardy and Turner seem to be seedlings of our native wild raspberry—much improved of course—which we all know comes in bearing some time before the ordinary tame sorts, which originally came from Europe, either directly, as Franconia, or indirectly, as seedlings such as Clarke.

SOME OF THE NEWER VARIETIES OF POTATO.

We have received from Mr. James H. Boyle,—who has long been a member of our Association, and takes a deep interest in horticultural matters—a number of samples of the newer sorts of potatoes, accompanied with a letter giving his opinion of the merits of each, for the purpose of imparting to the readers of the CANADIAN HORTICULTURIST the benefit of his experience. He procured his seed from B. K. Bliss & Sons, and presumes that it is correct.

ALPHA.—The samples sent us are of medium size, roundish-oblong in form, eyes small and shallow, skin white, flesh white. Of this Mr. Boyle says that the quality is good, but he would not recommend it for a general crop. Is one of the early sorts.

TRIUMPH.—Another early variety. Nearly round in form, with flattened sides; eyes medium, and moderately sunken; color reddish; flesh white; size medium. He finds the yield middling, and quality good.

EARLY OHIO.—This is a very handsome flesh-colored potato, of good size, roundish-oblong, largest at the stem end; eyes small, and deeply set; flesh white. Of this Mr. Boyle says, “first class in every respect.”

EXTRA EARLY VERMONT.—Of this he says, “it is impossible to distinguish it from Early Rose.”

SNOWFLAKE.—A white potato, with a somewhat russeted skin; oblong, flattened, tapering, but more pointed at the seed end; eyes large, but shallow; flesh white; size large. Mr. Boyle considers this to be without exception the best potato for the table. It is marked “medium” in time of ripening.

BROWNELL'S SUPERIOR.—In appearance very much like the Early Rose, having a similar form and color, though perhaps a little more tapering at both ends. The eyes are of medium size, moderately sunken; flesh white. This he calls a good potato, giving the largest yield of twelve varieties grown by him last year. He would not advise any one to plant it in low ground.

RUBY.—One of the prettiest colored potatoes in cultivation, and rightly named Ruby. Of medium size, roundish-oblong, tapering towards the seed end; eyes scattered over the whole surface, medium size and shallow; flesh white. Mr. Boyle considers it of but medium

quality, though the yield is good. Its time of maturity is intermediate between early and late.

TROPHY.—This is one of the late maturing sorts. Very handsome in appearance, of large size, skin peach-blow color, russeted all over; eyes distributed very evenly over the whole tuber; large but shallow, in form resembling the Early Rose. Of this Mr. Boyle says that the quality is good and the yield large, but it is apt to grow a large number of prongy potatoes.

BLISS' IMPROVED PEACH BLOW.—A late variety. In appearance like our well known Peach Blow, nearly round in form; eyes deeply sunken; flesh yellow. Mr. Boyle says this is claimed to be a rejuvenated Peach Blow; that he planted it the first of July, and obtained a large yield, and that the quality is first-class.

BROWNELL'S BEAUTY, he says is a large, coarse-grained potato, which rotted very badly with him in 1878; of fair quality and average yield, but he did not grow it in 1879.

Such notes as these are exceedingly valuable and interesting. We thank Mr. Boyle for his kindness in placing them at our disposal for the benefit of our readers, and hope that others will be stimulated by his example to give to the CANADIAN HORTICULTURIST the benefit of their experience with any vegetable, flower or fruit they cultivate.

QUESTION DRAWER.

(1.) What is the difference between Ironclad apple trees and Russian? (2.) Why are they so called?

There is a great deal of confusion on this subject, much of which is owing to the ignorance of those who are selling apple trees through the country. Strictly, a Russian apple is one that has been imported from Russia. Of these, the Alexander, Red Astracan, and Duchess of Oldenburg are familiar examples. Ironclad is a name given by fruit growers in the North-Western States, Minnesota, Iowa, &c., to those varieties which have been found to endure the rigors of their severe climate, where only the very hardiest survive. These may be varieties obtained from Russia, as the Duchess of Oldenburg, which is the only one of the three above named that is considered an Ironclad, or they may be of American origin, as the Wealthy, which is the only American variety recommended for general cultivation in the State of

Minnesota, and Duchess of Oldenburg the only Russian. There are many other Russian sorts that have been imported into America and are offered for sale, more or less hardy, and many other American sorts which are sold for Ironclads.

(3.) Are they the best variety to plant here, in the Township of Osprey, County of Grey?

The more hardy sorts of apple will doubtless thrive best in the County of Grey, but it is hardly necessary to be confined to the Ironclad class. The Red Astracan, St. Lawrence, Snow Apple, Mann Apple, Keswic Codlin, Ben Davis, Grimes' Golden, Ribston Pippin, Talman Sweet, and others of like hardiness, are surely able to endure the climate of the Township of Osprey. Thus far these very hardy varieties from Russia and elsewhere have not been as high flavored as those named above. The new Russian and Ironclads are offered for sale by the dealers in trees, at prices ranging from one dollar to two dollars per tree, and they find many purchasers. But wise men will let them alone until they have been pronounced worthy of general cultivation by the Fruit Growers' Association of Ontario. It is the business of this Association to disseminate information on these subjects, and it is doing it by means of the CANADIAN HORTICULTURIST and the Annual Report, so that there is no need of our farmers buying new fruit trees at high prices, only to be disappointed in the end. It will be quite time enough for them to experiment when the price has fallen to twenty-five cents per tree. If our farmers would all of them become members and read the publications of the Association, they would be saved much more than one dollar a year.

(1.) What is the matter with our apples; they are all decaying so early in the season that when spring comes, we shall hardly have an apple to eat? My Roxbury Russets that should keep until June or July are ripe now.

This is a very general complaint. We believe that the very protracted warm, almost hot, weather of October caused the fruit to mature prematurely, so that it was much riper when harvested than we have known it to be for many years.

(2.) What tree or plant will be distributed next spring to members by the Association?

It is the intention of the Directors to send plants of Wm. Saunders' Hybrid Raspberry, which should have been sent in the spring of 1877, but which they were unable to procure owing to the difficulty of

propagating it. It was produced by fertilizing the flower of the Doolittle Blackcap with the pollen taken from the Philadelphia. The blending of the characteristics of the two parents in this hybrid is very remarkable, both as to the flavor of the fruit and the general appearance. The color of the fruit is a dark purplish maroon. The plant is exceedingly productive and very hardy. The berries in size and form are intermediate between the Philadelphia and the Black Cap, and the flavor intermediate also. The foliage and wood are like those of the Black Cap, and the mode of propagation, namely, rooting at the tips of the young shoots, is also like that of this one of its parents. Those members who have the Report for 1873 will find on page 55 the opinion of the committee who examined these hybrids at that time. They were very strongly of the opinion that some of them would be very decided acquisitions to our list of hardy sorts; and we believe that those whose raspberries often winter-kill, will find the variety they will receive this spring to be able to endure the winter, and bear large crops of fruit.

(3.) "What is the best way to keep grapes?"

The keeping quality varies very much; some varieties will not keep but a very short time, others keep till quite late in the winter. The best method of keeping them is to gather them when perfectly dry, and lay on a table in a cool, airy room for a few days, to toughen the skin. Then examine each bunch, remove with sharp pointed scissors all green, unripe or defective berries; put up in small packages, baskets or boxes, and store in a dry, cool room, free from frost—the colder the better so long as it does not freeze. The best keeping variety is the Clinton. Isabella will keep for some time. Salem also keeps until after New Years.

SPLITTING OF BARK AT THE COLLAR.

Robert Scott, of Hopeville, in the County of Grey, writes:—

"I would ask, Will hilling up young trees in the fall cause the bark to split near the root in the spring? If not, what is the cause, and what will prevent it?"

We have not been troubled much with this splitting of the bark at the collar. We once had a few rows of very thrifty young trees, growing in a rich piece of black soil, that we found to be nearly all split in the bark just at the collar. The winter had been very severe,

with very little snow, and we attributed the splitting of the bark to the very severe cold freezing the sap, which was abundant in young trees, and causing the bark, which is more tender just at the collar than anywhere else, to burst by the expansion of the sap in freezing. We have never tried the experiment of hilling up the earth around the trunks of the young trees to see if it would prevent this splitting, but we think if a sufficient quantity of earth is thrown against them in the fall to protect them from severe freezing at the collar, it would prevent the splitting of the bark.

“Will you oblige by informing me through the *HORTICULTURIST* the best way to utilize pigeon dung as manure?”

We have not had any experience with pigeon dung, but knowing that it is very like guano in its qualities, should advise that it be used with prudence, a very small quantity being sufficient to produce beneficial effects, where a larger quantity would only be injurious. If dissolved in water, four ounces to the gallon will be quite strong enough for plants growing in the open ground, but plants in pots do not require more than one ounce to the gallon. Will those of our readers who have had experience in the use of pigeon dung have the kindness to answer this inquiry.

Our Meaford correspondent says of the answer to his inquiries, that there is one thing yet lacking, a very simple and apparently trifling thing, but to him, and it may be to others, of great importance, viz :—

“How shall we empty the apples from the basket into the barrel? Most of the people hereabouts put their hand in front of the basket and let them roll in, of course after lowering it down. I empty with my hands as I would eggs, but it takes a long time, and if not necessary I would abandon it.”

It is the practice of the writer to have the bottom of the barrel laid with apples carefully by hand, placing the apples stem downwards; this being done, he lowers the basket into the barrel, and gently rolls the apples out in the manner above mentioned into the barrel; then when there are sufficient apples in the barrel to admit of settling them by a gentle shaking of the barrel, he settles them in this way three or four times in filling up the barrel. He has never found that this method in any degree injured the fruit. Will our readers who are in the habit of barreling apples for shipment please to describe their method of procedure for the benefit of others.

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OUR TREE AND PLANT DISTRIBUTION.

There seems to be a very erroneous impression abroad in regard to the object which the Fruit Growers' Association has in view, in sending to each of its members some plant or tree each year. The impression that seems to prevail is that it is a sort of bonus given to the members to make up an equivalent for the annual fee. Now this is not the correct idea. The Directors believe that each member receives in the Annual Report and in the twelve numbers of the CANADIAN HORTICULTURIST a full return for the dollar. The object which the Directors seek to attain is to make an experimental garden of the whole Province, and each member an assistant gardener, who is expected each year to report whether the tree or plant proves to be hardy, productive, free from disease, and the fruit good or poor in quality, its time of ripening, usefulness, and profitableness. It is often as important to know that a fruit is poor in quality, or does not usually ripen, or that the tree is not hardy or not productive in any locality, as to know the very opposite. Yet members have been quite ready to find fault with the Directors for sending a plant or tree the fruit of which did not prove to be of good quality, or large in size, or the tree did not prove to be hardy or productive. It seems to have entirely escaped them that it was sent to them in order to ascertain these very points, and that they are acting the part of experimenters, growing and fruiting the thing not for their personal benefit, but to add the results of their experiment to the general stock of knowledge with regard to the variety of fruit sent them to test. It is expected that members are willing in this way to contribute to the diffusion of information with regard to the fruits that succeed or fail, that those who come after may know what to plant and what not to plant. "No man liveth to himself," and fruit growers are just the men to prove the truth of this maxim by unselfish labor for the good of others.

THE BERBERRY AS A HEDGE PLANT.

BY A. HOOD, BARRIE, ONT.

The berberry is one of those unfortunate plants that a popular prejudice has in the old world almost banished from cultivation, and just as it was beginning to outgrow these prejudices on this side of the Atlantic, and recommend itself as the only really hardy hedge plant we possess, scientific investigation steps in and exerts a repressing influence on the growing popularity of this valuable hedge plant, threatening to banish it without ceremony from our fields and gardens; this outrage, however, on one of our best friends I cannot permit without a word of remonstrance.

Let us see in the first place what is the indictment against this unrivalled pig repeller and crop protector. It is charged then by popular prejudice that the berberry causes the rust in wheat, and by scientific investigators, who are more careful in their choice of expressions, not that it "causes rust,"—they are very careful not to go so far as that—but that the fungus which attaches itself to the straw and there growing becomes rust, that this fungus at one stage of its existence attaches itself to, and is sustained and nourished by the berberry. This is the charge. Very well, for the sake of argument suppose all this is admitted, what does it prove? Does it prove that if there was no berberry there would be no rust? Nothing of the kind. Does it prove that if there was no berberry there would be less rust? No, even this much is not shown; but it can be shown that whether there is berberry or not, in this country at least, there is always more or less rust, proving that the berberry is not by any means the only plant to which the rust producing fungus can attach itself, and on which it can feed and flourish. Could it be shown that if the berberry was banished there would be no rust—could it even be shown that without it there would be much less rust, I would say at once tear it up root and branch; but if such cannot be shown where is the wisdom in destroying our friends when by doing so we cannot weaken our enemies? Where is the use in discarding the berberry when it leaves us as far off as ever from banishing rust?

The berberry is hardiness itself, and as a hedge plant has, I believe, no equal for a climate like ours. It is not in the least injured by the

rigorous fruit destroying climate of the Ottawa Valley, and would, I should imagine, be the only thing likely to be useful in the great North West. It possesses all the requisites of a perfect hedge plant, and more too, yes more, for it produces fruit which makes excellent preserves, and that surely cannot be considered indispensable in a hedge plant. The requisites are perfect hardiness, thrifty growth, prickly branches, sufficient strength when full grown to turn any animal, and a propensity to stool out from the crown of the plant just below the ground, which so thickens the base of a well trimmed hedge that the smallest pig could not crawl through, and prickly enough to prevent him making the attempt; and what is very important, it never suckers. All these requisites it possesses, besides which, a hedge of this plant presents a very agreeable appearance to the eye, and when in full blossom is very much admired. It is about the last thing in the garden or field to lose its leaves in the fall. There is no necessity for planting in double rows, as is always done with the English thorn, for every plant is capable when full grown of quite filling with its numerous shoots a space of fully one foot; but as it would take ten years or more to do this, it might be advisable to plant a little closer, say eight or nine inches. And with all these recommendations it has yet another, and a very important one in the eyes of the farmer, and that is, that cattle will not eat its leaves, so that it may be planted out without protection. And when once planted there is no trouble of renewing every third or fourth plant that may have died out, because with anything like proper planting and care they are all sure to live; and what is more, they grow so even with one another that there is very little difference between the best plant and the worst when of the same age.

The plants may be propagated from cuttings or grown from seed. The cuttings I have never tried, and have found it difficult to hit on just the right plan of raising from seed. The seed can be obtained from some American firms at forty cents per lb., but I do not know where it is to be had in Canada. The difficulty is to know when to sow it. If sowed in the spring, no matter how early, it will not come up the same year; a little of it may start in the fall and some the next spring, or not at all. If sowed late in the fall very little of it will start in the spring, and the rest perhaps not at all. The best success I have had was with some sowed early in August, which came up the

next spring. But had I known it in time, I should have done much better with some sowed in a hot-bed in spring, which did not come up that season at all, and I thought the seed had all rotted; till in the following spring, when the old hot-bed was scattered over the ground as manure, I found all or nearly all the seeds had made a start.

The purple-leaved variety, which is not propagated from seed, is very ornamental, and would look well planted at regular intervals along with the common kind.

BEST VARIETIES OF CABBAGE.

The Editor of *Seed-time and Harvest*, published at La Plume, Lackawana Co., Penn., who has had large experience in the growing of vegetables, says, "do not attempt to grow cabbage in old gardens which have been long in cultivation, if a good new sod can be obtained. A deep sandy loam seeded to clover and plowed under early in autumn makes the best possible foundation on which to produce a crop the following season, with the aid of manure or special fertilizers."

EARLY JERSEY WAKEFIELD.—This variety he considers the best early sort, being the earliest of any that produces a solid head. The seed may either be sown in the fall and the plants wintered over in frames, or sown in March in a hot-bed, pricked out into a cold-frame in April, and planted in the open ground as soon as the weather will admit.

HENDERSON'S EARLY SUMMER.—He speaks very favorably of this newly introduced variety, which is but a very little later than the preceding, grows to a much larger size, and is very sure to form good solid heads. We may add that it is somewhat difficult to manage if the seed be sown in the fall and the plants wintered over, for if the autumn be a little warmer than was expected and extended a little longer, the plants have a strong tendency to run to seed. The better way with this sort is to rely on spring sowing in hot-bed. It possesses the good quality of standing a long time without bursting.

NEWARK EARLY FLAT DUTCH is used as a second early sort by the market gardeners of New Jersey, who supply the great cities, and is considered by our authority to be the best strain of Early Flat Dutch, yielding large and solid heads.

EARLY WINNINGSTADT.—Of this sort, he says that it is more sure to produce a head under any and all circumstances than any other,

and when planted on rich soil and well cultivated will produce heads of ten to twelve pounds in weight, but if given only poor soil and treated with neglect it will produce a solid head, though it may be no larger than a goose-egg. The heads of this sort are sugar-loaf or cone shaped.

FOTTLER'S EARLY DRUMHEAD.—We are indebted to our co-laborer for a package of the seed of this variety—which he thinks he has greatly improved since it came into his hands—and intend to give it a careful trial. He considers it to be the best variety for all purposes, being intermediate between the Winningstadt and Flat Dutch, and producing large, white, flat heads, which often attain to twenty pounds in weight.

PERFECTION DRUMHEAD SAVOY is considered by all growers to be the best of this class, which is the very best class in point of flavor. The heads of this variety are large, solid, and finely curled.

LARGE FLAT DUTCH.—Some have given the prefix "Excelsior" to this variety as a distinguishing mark of a distinct strain, but our trials have not enabled us to see the difference. The advantage of this variety over some others is that it will endure the summer heat and drouth that prevail in some parts of Ontario better than any other sort. It is very sure to head, and the heads are large, flat and solid. Having less outer leaves than most large growing varieties, the plants can be set closer together.

TO PREVENT GRUBS FROM DESTROYING YOUNG STRAWBERRY PLANTS.

A correspondent of the *Fruit Recorder* says that the ravages of white grubs in new strawberry beds can be wholly prevented by dipping the roots of the plants at the time of setting in a solution of copperas and salt, made by dissolving half a pint of salt and one ounce of copperas in a pail three-fourths full of water. The plants should be formed into bundles as large as can be conveniently handled, and the roots thoroughly dipped in the solution, and set out at once. He says that he has used this for a number of years with perfect success, thereby securing a vigorous growth and unbroken rows; and that he is very much in favor of salt and copperas for all kinds of fruit and vegetables, having used copperas on strawberries at the rate of

three pounds to a square rod, and about the same of salt, which produced the largest possible sized fruit and dark heavy foliage. He adds that for potatoes this will be found to give the very best satisfaction, producing a strong, rapid growth of vine, great productiveness, and freedom from rot.

JONAH'S GOURD.

BY REV. VINCENT CLEMENTI, B.A., PETERBOROUGH.

"Came up in a night, and perished in a night."—JONAH IV. 10.

The Assyrian sun's perfervid heat
Upon the prophet's temples beat,
And well nigh scorched his brain :
When lo ! at the Almighty's word
Forth sprang a most luxuriant gourd
To ease him of his pain.

But scarce had he enjoyed one day
Exemption from the solar ray,
And rest and shelter found,
When some foul "worm" from earth-bound haunt
Approached, and ere next morn the plant
Lay withered on the ground.

So have I seen some petted flower,
My garden's pride, at evening hour
Uplift its gorgeous head ;
But "when the morning rose next day,"
That flower—its glory passed away—
Lay worm-cut on its bed.

And thus, too, when our hearts beat high ;
When with too fond idolatry
We cling to aught of earthly mould,—
Wife, husband, children, rank or gold,—
Forgetful that the Hand that gave
Can take away :—'tis then we brave
The wrath of Him whose treasury
Has "worms" as well as "gourds" laid by
To test His children's love.

The heart, elate at night, by morn
Grief-struck, lies bleeding and forlorn,
God's chastening hand to prove.
And if we read aright, we see
The "uses of adversity"
To waft our thoughts above.

FENCES.

BY REV. R. BURNET, PRESIDENT F. G. A., HAMILTON.

"Give us a live fence," said one at our Winter Meeting last week, "give us a live fence." Another said "Let us have *no* fences. Let a man fence in his own cattle, and not his neighbours' out." "Osage makes a good fence," exclaimed a third, while another went strong for Old Country Thorn. What shall be done when doctors disagree?

The grand question of fencing is beginning to force itself upon the attention of patriots. It has received attention on the other sides of our lines. The increasing scarcity of fencing timber, the expense connected with fencing, and the improved method of feeding cattle, all combine to give an interest to the subject of fencing, which in other circumstances it would not have had.

We have only one answer to give to the query, What is the best live fence? Others may differ from our view, but let us agree to differ, and discuss the matter soberly and earnestly. Recently we met with a distinguished fruit grower and farmer, and his mind was made up to make use of the Osage Orange, and indeed he had made arrangements for planting. The Old Country Thorn suited another. In Westminster any one can see for himself what the Old Country Thorn can do in the shape of making a good hedge. The Messrs. Macpherson have miles of it. The expense connected with its care is considerable, and strange to say, the outcry is general, it is too rampant a grower. This in our latitude, climate and soil may be said of almost any variety of hedge plant. We despair of getting any one plant wholly suitable to the varying variety of our longitudinal country.

Without disparaging the opinions and views of others, we are persuaded the Honey Locust tree, (*Gleditchia Triacantha*), is more suited for a live fence in the Province of Ontario than any other tree or shrub adapted for fencing purposes. Objections to its use for this purpose may be made. It is too rampant and stately a grower. We admit as regards a fence that this is a strong objection. Perhaps, however, on second thought, even this may have its advantages. We are seeking trees for shelter, shade and ornament. Two purposes are well served by using the Honey Locust. First, it is a perfect hedge, and will resist cattle effectually. Second, it makes an agreeable shade, and at the same time no mean wind-break. It requires to be planted

quite close; it will make room for itself. Should any of our members pass through St. Catharines they will have an opportunity of examining a good Honey Locust hedge on the street leading to the Railway Station, near the Welland Canal. Here and there, it is true, there are gaps, but care at first planting, and speedily renewing the decayed plant, will amply provide for all necessities. To the question, then, What is the best live fence? we would answer unhesitatingly the Honey Locust.

We have had it affirmed again and again that the fruit of this tree is the husk which the prodigal of the gospel did eat. Its sheath-shaped seed-pod no doubt giving coloring to the popular belief. Whether this rumor be true or not, it is a fact that the Honey Locust resists the swine, and in saying this we may affirm that it will prove impervious to any domesticated animal.

The following article is so intimately connected with the subject treated by the President, that we copy it for the further information of our readers.

THE HONEY LOCUST HEDGE.

(From the *American Agriculturist*.)

* * * We now consider the method of making a hedge. One can start with the seeds, or purchase young trees from the nurseries. Of course it is cheapest, so far as outlay is concerned, to begin with seeds. If one can afford to buy the plants he will gain a year, or perhaps two, in making the hedge.

SOWING THE SEEDS.—In our own experience with them, the seeds had been kept all winter in the pods; they were taken from the pods and sown at once, coming up as readily as beans. Purchased seeds may have become too dry, and it will be safest to soak them by pouring on warm water, and allowing them to remain in the water for about twenty-four hours. A seed-bed of good light soil should be prepared, and the seeds sown as if they were beans, dropping them about three inches apart in the drill. The rows, if to be worked by hand, may be fifteen inches apart, and twice that distance if a horse cultivator is to be used. During the season the young trees are to be well cared for by working between the rows and pulling up the weeds that appear in the rows. If any plants are crowded by too thick sowing, thin them while quite young.

SETTING THE HEDGE.—Usually the plants will be large enough when one year old, but if they have not made a strong growth they may be allowed to grow another year. Nurserymen furnish the plants at one or two years old as may be desired. The first thing to be done with the plants, whether home-raised or purchased, is to

assort them according to size, making two or three sizes. The object of this is to secure uniformity in the hedge; if a small plant is set between two large ones, the larger plants will keep the advantage, and there will be a weak place in the hedge. Besides assorting, the plants must be prepared by trimming, cutting back the long tap-root, and shortening the tops by cutting off the main stem and larger branches about one-half. This is very important, the object being to make the plant branch near the ground, which it will not do if the tops are all left on. In these operations do not expose the roots to the air more than is necessary. The line of the hedge should be well plowed and harrowed, but no manure will be needed; it should be a well prepared bed about four feet wide, in the centre of which the hedge is to be set. It is very important that the hedge be set straight, and this can be best secured by stretching a line as a guide in planting. The plants are to be set eight inches apart, and may be put in with a dibble, a large trowel, or by opening a cut with the spade, whichever method the planter may be most familiar with. A proper hedge—thick at the bottom—can only be made in four or five years, and it must have each year a severe cutting back, which should begin the first fall, cutting the plants back to a height proportionate to their growth. But of this it is not our purpose to treat at present. To answer some inquiries, we may say that in localities where the Osage Orange is perfectly hardy, we should prefer it to Honey Locust, on account of its greater beauty if for no other reason; but there is a wide belt where it is uncertain, and still another where it will not endure the winters, and in these the Honey Locust is the most valuable of all hedge plants thus far tested. It has been objected that the Honey Locust is not suited to hedge making because it is naturally a large tree, and can not be dwarfed without injury. The objection is entirely without weight, as we know that it has been in successful use for over thirty years; besides the same applies to the Osage Orange, which will grow to a tree sixty feet in height.

WINTER MEETING OF THE FRUIT GROWERS' ASSOCIATION.

This meeting was held in the Council Chamber in the city of Hamilton, on Wednesday and Thursday, 18th and 19th Feb'y, 1880. There was a good attendance of members from various parts of the Province.

On taking the chair, the President introduced to the meeting Mr. J. S. Woodward, of Lockport, N. Y., a delegate from the Horticultural Society of Western New York.

After the reading of the minutes of the last meeting by the Secretary, the President reported that he had complied with the request made by the Association, and waited upon the Hon. Mr. Pope, who assured him that he would have such inquiries made as would lead to the obtaining of accurate statistics with regard to the fruit production of Canada.

Vice-President Roy being called to the chair, the President announced that he had been favored with a paper from Dr. John A.

Warder, of Ohio, on planting trees along our road-sides for shelter, shade and ornament, and remarking that Dr. Warder had given great attention to forestry, and that he is an acknowledged authority upon all matters relating to the subject, proceeded to read the paper he had received, which was listened to with marked interest. The paper is too lengthy to admit of its being transferred to the pages of the HORTICULTURIST, but it will be given entire to our members in the Annual Report. The principal trees recommended by the writer to be planted were our native White and Black Spruces, the Hemlock Spruce, the Balsam Fir and the Norway Spruce. Of this last he says, that "though an imported species, has proved itself a good immigrant in all parts of our Continent where it has been planted, and is entitled to a front rank in avenue, wind-break or grove." Of the Hemlock Spruce he says, "it is one of your most beautiful native conifers when well exposed upon a grassy lawn or springing from a mass of native rocks. Its color is supremely lovely, and holds well." Of the Pines, he speaks very strongly in favor of the White Pine, styling it the "Queen of the Pines," on account of its extreme grace and beauty, either singly or in groups. The Norway or Red Pine he designates as a superior tree, whether planted for shelter, shade or ornament, and says we may plant it largely without fear of disappointment, the young trees excelling in growth the Scotch and Austrian Pines.

Among deciduous trees he assigns a prominent place to the Maples, giving the preference to the Sugar Maple, on account of the majestic beauty of its form and the gorgeous coloring of its autumnal foliage. Of the Elms, he seems to have a strong partiality for the American White Elm, whose branches form such noble gothic arches over the streets of so many New England cities. Our Oaks he thinks have been quite too much overlooked by our tree planters, for where they have been introduced they have given great satisfaction, and suggests that if some of our streets were planted with the Scarlet Oak they would furnish a most gorgeous fringing to the highway during the autumnal drive. For road-side planting preference is given to the Green Ash over its fellow because of its smaller size and clean, shining, dark-green leaves, while the tree grows rapidly and is very hardy. The paper closes with mention of the Tulip Tree, than which we have none more beautiful in form, foliage or flower, or more free from insect foes, and yet one that is but seldom planted.

A lengthened discussion followed the reading of this paper, in which the members present gave their experience of the growth, hardiness, beauty and value of many of our shade and forest trees.

W. Saunders, London, stated that the Nordman's Fir, and the European Silver Fir had not proved to be hardy in that part of the country, and objected to the planting of Poplars and Wild Cherry as shade trees, because they were so badly infested with insects.

P. E. Bucke, Ottawa, mentioned the Basswood as a handsome shade tree, also the Sweet Chestnut. The Lombardy Poplar is planted by the Ottawa Railway as a protection against snow drifts. He also mentioned the Birches as hardy trees.

Chief Johnson, Tuscarora, mentioned the Black Walnut as a valuable timber tree, saying that he has been offered a dollar per foot for trees of it when from twenty to twenty-five years old. The Sugar Maple was also a very valuable tree.

President Burnet thought our own Canadian White Pine the model tree for shade, ornament and profit.

J. S. Woodward, Lockport, N. Y., said that in his part of the State more Maples were used for road-side planting than any other tree. The Black Walnut should be abundantly planted because of its value for timber; those grown in the open ground being better than the forest grown, and soon attaining a size sufficient to make them valuable.

Vice-President Roy, Owen Sound, planted seeds of the Black Walnut ten years ago, and the trees are now bearing nuts. He spoke of the elasticity of the White Pine, the branches not being broken by the weight of the snow, which in his section is often very considerable.

B. Gott, Arkona, thought that the nuts both of the Black Walnut and Hickory were improved by cultivation.

J. S. Woodward, Lockport, N. Y., desired to speak of the great value of the Hickory, and to advise extensive planting of this tree, on account of the value of the nuts and of the timber. He thought that the worst enemy this variety of our trees had was the axe-handle hunter.

Thos. Beall, Lindsay, read a paper on the planting of trees, in which he expressed the opinion that no tree indigenous to this Province has so many and such strong claims for consideration at the present time as the Black Walnut. It is easily propagated, grows rapidly, has a fine appearance even when comparatively young, and when old is one of the most magnificent trees to be found in this or any other country,

and is at maturity the most valuable of all our trees for its timber. The paper proceeds to show the commercial and other values of this tree, and the ease with which it may be profitably grown. It will be published in full in the Annual Report.

Mr. Chas. Arnold, Paris, read an interesting paper, in which he considered the question, What shall we plant? and answered it by saying, "Plant apple trees for profit, and still continue to plant, until at least one-eighth of this portion of Ontario shall be covered with apple trees," and gave as his reasons that no portion of the earth can grow better apples, and but a very small portion can grow as good; while the great north-west now being so rapidly settled must buy its supply of apples.

Besides planting apple trees, however, Mr. Arnold advised the planting of belts of Norway Spruce around the orchards, and the planting of waste land, hillsides and steep slopes and banks, with such trees as the Black Walnut, Hickory, and other kinds that will thrive in the various localities. This paper will also appear in the Annual Report.

Mr. B. Gott, Arkona, read a paper on forest tree seeds and seedlings, in which he spoke of the influence of forestry upon our fruit growing and agricultural interests, the value of timber belts and wooded lands in modifying the force of winds, and protecting fruit trees and grain crops from sudden changes of temperature. That we might be enabled to propagate these trees cheaply, he called attention to the proper time for gathering and planting seeds of our forest trees. The Maples ripen their seeds early in summer, and grow best if gathered and sown immediately, and indeed all tree seeds germinate most freely if sown as soon as they ripen. Mr. Gott proceeded to give some directions for preserving tree seeds in a fresh state, and also for the preparation of seed beds, the sowing of seeds, and the care of the young seedlings, for full details of which we must refer our readers to the paper, which will be given in full in the next Annual Report.

Mr. W. Saunders, London, read a paper on some deciduous trees and shrubs worthy of more general cultivation. We have not space to enumerate all that were mentioned, but must content ourselves with noticing a few, knowing that our readers will have the paper in full in the next Annual Report, and can then study it at their pleasure. One that Mr. Saunders mentioned is a native of our own forest, and

one of the most showy when in flower. It is pleasantly associated with memories of childhood rambles, and gathering of wild wood flowers in the spring-time of the year, and redolent of the odors of those balmy, sunny spring days so beautifully in harmony with those early days of life's own spring-time, before the shadows have fallen darkly on the pathway, before the clouds return after the rain. It is the Flowering Dogwood, which forms a small tree of sixteen to twenty feet in height, opening its large white flowers in May, which in the autumn are replaced by bright red berries, while the foliage changes as the season advances to most showy red and purple. Another beautiful tree, well worthy of the attention of every one who plants for shade or ornament, is fitly spoken of in this paper, the Tulip Tree. It may be found in considerable numbers in the vicinity of St. Catharines, and a few have been planted on one of the streets of the city. It seems to be exempt from the attacks of leaf-eating caterpillars, and is one of the most interesting shade trees, both in its foliage and flowers.

Of trees not indigenous, he mentions among others the Ginko or Maidenhair Tree, one of the most interesting of all that endure our climate. It would seem as though in this tree we had caught nature in the very act of passing from the needle-like leaf of the pine to the broad leaf of our deciduous trees, for the leaves have the appearance when closely examined of a number of pine leaves welded together and slightly flattened in the process. In form the leaf is much like a single frond of our Maidenhair Fern, whence the name Maidenhair Tree.

Mr. Saunders also mentions that recent addition to our hardy shrubs, the Panicle-flowered Hydrangea, (*Hydrangea paniculata*.) He speaks of it as attaining a height of from eight to ten feet, at which size it must be a most showy and attractive object, with each branch terminating in a large pyramidal cluster of white flowers of nearly or quite a foot in length, which continue for many weeks, gradually changing from white to a faint flesh color.

After the reading of these papers members spoke of other shrubs and trees which had proved to be hardy and at the same time most beautiful ornaments of the lawn, such as the scarlet flowering Japan Quince, the sweet-scented Daphne Mezereon, which had proved hardy at Lindsay, and others.

YELLOW S IN THE PEACH.

The yellows in the peach was discussed, and the necessity of Legislative action was strongly urged. The Secretary read the Statute of the State of Michigan providing for the destruction of all peach trees affected with the yellows.

Mr. W. M. Orr, Stoney Creek, said that this disease was becoming seriously prevalent.

Dr. Watt, Niagara, thought that a shorter Act than that of Michigan would be better suited to our needs, and suggested that a competent inspector might be appointed, whose duty it should be, when so required by any one complaining of the existence of the disease, to examine the suspected trees, and if found to be diseased empowered to destroy the trees.

Mr. Pettit, Grimsby, thought that the only reliable method of eradicating the yellows was to dig up and burn every tree that showed symptoms of the disease.

Mr. Cline, Grimsby, was satisfied that cutting out the affected trees as soon as the disease appeared was the only remedy, and he was confident that the disease was infectious.

Mr. A. M. Smith, Drummondville, said that the disease was spreading in his section, and he feared that soon there would not be a single sound tree. It first made its appearance about four years ago. It was believed that the disease was communicated to healthy trees by the pollen carried by insects from a diseased to a healthy tree, or by pruning the tree with a knife or saw that had been used on a diseased tree.

Mr. Woodward, Lockport, N. Y., said that in his State they were behind Michigan in that they had not enacted a law to prevent the spread of the yellows. He understood that the law worked well in Michigan, and that by means of its provisions the peach growers in some parts of the State had stamped out the disease. He believed that there was not a peach orchard in Western New York that was exempt from this disease.

Mr. Page, Fonthill, remarked that a thorough inspection of orchards in that vicinity had failed to reveal any appearance of the disease.

On motion of Dr. Watt, the President appointed Messrs. A. H. Pettit, W. Roy, W. Saunders, and R. Burnet a committee to prepare a Bill for the eradication of the yellows, and wait upon the Government to urge the passage of such a measure.

VEGETABLES.

Dr. Watt moved the appointment of a committee on vegetables of recent introduction, who should make observations during the summer and report at the next winter meeting. The President appointed Mr. Page, Chairman, Messrs. A. W. Taylor, Hood, Chas. H. Biggar, Dempsey and Allan.

A. M. Smith suggested that a committee should be appointed on new fruits, who should take notes of all newly introduced fruits that came under their observation, and report at the next winter meeting. The President thereupon appointed A. McD. Allan, Chairman, Messrs. Burnet, Dempsey, A. M. Smith, Arnold, Holton, Beadle, Gott, Morris and Saunders.

PRIZES BY THE AGRICULTURAL AND ARTS ASSOCIATION.

A resolution was introduced by Mr. Anderson, of Ayr, and carried, to the effect that the Provincial Agricultural and Arts Association be requested to give prizes for the best apple picker, apple packer, apple parer, and apple dryer.

In regard to packing apples, Mr. Anderson remarked that it was essential that the apples should be well pressed into the barrels, so as to keep them from moving at all in the barrel when undergoing handling in transportation.

Mr. Beadle, St. Catharines, remarked that an apple picker was a very convenient instrument for gathering a few specimens from the extremities of the branches, but he never had seen anything that would gather a crop of apples equal to a pair of human hands. It was of great importance that the fruit should be carefully gathered by hand without bruising, and put into the barrel in a sound condition, and firmly pressed, so that the apples could not move no matter how roughly the barrel was handled. He spoke also of the great importance of putting only perfect apples into the barrel, rejecting all that were imperfect, under size, wormy or in any way defective. He was glad that any steps should be taken to call attention to the drying of fruit in this Province. A great many of our most excellent autumn fruits were lost by decay, because we had no drying and canning establishments of sufficient capacity to work up the fruit before it perished. There was certainly a most excellent opening for fruit drying and fruit canning establishments in several of our fruit centres. He had often

wondered why enterprising men of business did not inform themselves upon these branches of industry, and put up a drying establishment and a canning factory at such a noted fruit and vegetable centre as St. Catharines. The only canning establishment in the Dominion as he believed is the one at Grimsby, and that has not a capacity sufficient to supply one-thousandth part of the canned fruit consumed in this Dominion. Nor could he see why we could not can fruits as well and cheaply as our cousins over the border, and compete favorably with them in foreign markets. The profits on fruit dried in some of the large evaporators in the United States he understood to be very satisfactory.

FENCES, AND CATTLE RUNNING AT LARGE.

This subject called out a very interesting and animated discussion.

Dr. Watt remarked that we had become so accustomed to the practice of keeping up fences along our highways, in order to keep other people's cattle from damaging our grain fields and other crops, that we had no conception what a tax we were paying in this very matter of keeping up road-side fences. "Why," he would ask, "should I pay a tax of ten, twenty, or perhaps thirty dollars a year that my neighbors may pasture their cattle upon the highway? And yet that is in reality what many of us are doing. Why should not every man be obliged to take care of his own animals, and so keep them that they cannot trespass upon my fields?—*To be continued.*

QUESTION DRAWER.

Mr. D. Shoff, MacGillivray, asks:—

"How is this weather going to develop fruit buds, injuriously or not? Give your opinion in the HORTICULTURIST. I have lived here forty years, and I never saw such a winter as this. Last fall we had a second growth of flowering shrubs, and in flower."

At present (March 1st) the fruit buds seem to be sound, and unless we have warm weather later in the season sufficient to bring out the fruit buds more fully, followed by frosts severe enough to kill them, there will be a good crop of fruit. March is usually the trying month, and there is probably more danger of injury than usual, owing to the unusually mild weather of the winter.

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[No. 5.

THE WINTER MEETING.

DISCUSSION CONTINUED ON THE SUBJECT OF FENCES.

Mr. Beadle was very glad that this subject had been introduced, and thought that it was time that it received the thorough consideration which it deserved. He believed that if our roadside fences were taken away and in their place trees were planted, so that our highways would present the appearance of long avenues, not only would our farmers be saved a very considerable item of expense, but the value of their farms would be increased by the attractiveness and beauty of such a country. He hoped that a committee would be appointed to make a thorough investigation of this matter, inquire into the amount of land taken up and made worse than useless by these snake fences, and the annual average cost to each farmer of keeping them up.

Mr. Quinn, Port Dover, thought it was useless to look to our municipal councils for action on this subject; Provincial legislation alone could put an end to this nuisance of cattle running upon our roads and breaking into our fields.

Mr. Croil, Aultsville, spoke of the roadways blocked with snow by reason of these roadside fences, and would gladly hail the day when they could be abandoned. If a law were passed prohibiting cattle from running at large this could be soon attained.

It was resolved that in the opinion of this meeting every man should be compelled to look after his own animals, and that the President appoint a committee to investigate and report on the subject of fences at the next winter meeting.

The President appointed Messrs. Beall, Bucke, and Dr. Watt.

RASPBERRIES.

A. M. Smith, Drummondville, read a paper on raspberries, speaking of the fine quality of the cultivated varieties, and expressing surprise that so many of our farmers will content themselves with the wild

raspberries of the fence corners, when fruit so much better and more easily and cheaply procured can be raised in the garden.

Of the Philadelphia, he says it would be *the* berry for the million on account of its hardiness and great productiveness, were it not that its dull mouldy color gives it the appearance of having been picked a long time, for which reason it does not sell as readily nor command as good a price as berries of a brighter color; and besides it has not so high a flavor as some other sorts. Yet its productiveness is very great, yielding, he thinks, a third more than any other variety he has tested.

The Highland Hardy is hardy, very productive, and the fruit of good color but small, yet with good cultivation it pays well on account of its earliness.

The Clarke combines as many good qualities as any berry with which he is acquainted, and is one of his favorites. It is hardy and productive, and the berries large, bright colored, and fine flavored. Its most serious defect is that it is too soft to ship long distances, but an excellent variety for a home market.

The Brandywine is the best for shipping to a distant market on account of the firmness of the fruit, but the berries are small, and the plants sucker badly.

Of the new varieties, he says that the Pride of the Hudson, which was introduced with such a flourish of trumpets, (see Vol. 1, p. 135), has not done well with him. He also was not fortunate with the Delaware. The Amazon is a second edition of the old Belle de Fontenay, yielding berries in the fall. Arnold's Diadem seemed to him when he first saw it to be the berry he had been long looking for, light colored, hardy, and of the character and quality of the Brinkle's Orange, but it disappointed him by yielding one-third of the crop red berries, and the balance nothing like what he saw on Mr. Arnold's grounds. However, he proposes to give it further trial, and see if he can fathom this singular freakishness. Saunders' Hybrid he had an opportunity of testing through the kindness of Mr. Saunders, and found it enormously productive and very hardy, also very fine for cooking, and canning in particular, but does not think it will ever become a popular market fruit on account of its peculiar purplish maroon color.

Of the black-cap sorts, he cultivates for market the Davison's Thornless and the Mammoth Cluster, the former for its earliness, and

the latter for its productiveness and lateness. The white-caps, such as the Golden Thornless, are not worth growing.

The paper closes with some excellent hints on cultivation and soil, which our members will have an opportunity of studying when they have the paper in full in the Report of this year's transactions.

Some discussion followed, chiefly on the singular and interesting variations in fruits and flowers known as "sports."

Mr. P. C. Dempsey, Albury, presented an interesting paper on the varieties of apple found to be most desirable for cultivation in Prince Edward County. He stated that the Early Harvest when given good garden culture on a loamy soil would produce good crops, and considered it one of the best amateur varieties. The Red Astracan grew well on almost any soil. The fruit was large, pretty, and the best of its season for market. The Duchess of Oldenburg succeeds in almost every soil, and the fruit is one of the best of its season for marketing, on account of its attractive appearance. The Gravenstein is tender in that County, except when grown on a well drained gravel or sandy soil, but the fruit was one of the best both for home use and for market. The St. Lawrence is always healthy, and produces an abundant crop each alternate year of large, conical, striped apples, that attract the attention of every one. The Fameuse or Snow Apple tree he says is always good in every variety of soil in which he has ever seen it growing, and the fruit is very attractive when fair, but liable to spot in every variety of soil. The Beauty of Kent he thinks has been overlooked; the fruit is very large, yellow striped with red, and one of the best for cooking and market; while the tree makes a rapid growth, thrives in every soil, and produces large crops. The Baldwin is very tender, succeeding in only a few favored spots. Rhode Island Greening not always hardy. Golden Russet one of the best and most hardy trees in that County, but productive only in favored spots. Talman Sweet succeeds where an apple tree of any variety can be grown at all. Ben Davis is a hardy apple, good grower; commences to bear when three or four years from the graft or bud; succeeds best on a strong and deep loamy or gravelly soil. The fruit keeps well until July with ordinary care, and commands a better price than Golden Russet. Mr. R. H. Potter, of Napanee, places this variety at the head of his list, yet Mr. Dempsey advises that planters experiment cautiously with this variety, because in some localities the

fruit is small and almost worthless. Other varieties are mentioned, and their value for planting in that County fully discussed, but sufficient has been given to show that the paper is a most valuable contribution to our knowledge of the varieties of apple most extensively cultivated and tested in the County of Prince Edward.

The meeting was continued for two days with marked interest. There was an exhibition of some choice winter fruits, many of which are recent importations from Great Britain, fruiting for the first time in this Province.

There will be a mid-summer meeting of the Association at the Ontario School of Agriculture, Guelph, early in July.

ENGLISH SPARROWS.

BY JOHN KNOWLSON, LINDSAY, ONTARIO.

Having observed an article in the CANADIAN HORTICULTURIST headed as above, I beg to say that in the winter of 1878-'79 I made a similar discovery to that made by your correspondent, Mr. Newhall, of Toronto. I happened to be looking out of a window in the direction of some dwarf pear trees and gooseberry bushes, and saw a number of sparrows picking busily at something, and at the moment concluded those trees must be infested with some sort of insects, and went at once to examine, but failing to see anything of the kind I began to scrutinize more closely, and soon discovered that they had been picking off the buds, the outer scales of which I found under the trees in quite conspicuous quantities. I mentioned the circumstance at the time to some of my horticultural friends, and expressed a doubt as to whether this importation was going to prove a boon to the Canadian fruit grower. A large flock of those birds visited my orchard and garden that winter, but since then they appear to have decreased in number in this locality, for although I occasionally see a few on the streets, I have not witnessed a visit from them during the present winter. It has occurred to me that possibly there may be a reason for these birds not attacking the buds of my trees the present winter from the fact of its being a very mild open season, affording the sparrows an opportunity to find food on the bare ground; and consequently it may be only in extremely severe winters that they are driven to the necessity of picking buds from the trees.

ENGLISH SPARROWS.

BY SAMUEL HUNTER, SCOTLAND, ONT.

I notice in the CANADIAN HORTICULTURIST for March an article by Mr. J. Newhall, of Toronto, in regard to the English Sparrow destroying the fruit buds on his bushes and trees. I do not doubt for a moment but that his bushes are denuded, because he says so, but it is strange nevertheless. I have been acquainted with the habits of the sparrow in their native home, where they were very plentiful, and where there were large crops of small fruits grown—currants, and especially gooseberries—and never knew them to interfere with fruit buds of any kind. The only crime laid to their charge was helping themselves to a little grain close to the hedges, and for this when a boy I have been furnished a gun, and have shot them, which I very much regret. We did not know much about the trouble experienced with insects, and did not stop to consider what the consequence might be if deprived of our feathered friends. It is said that emigrants from the old country are honest when they first come here, but soon become apt scholars in roguery; and I was wondering if it could be so with the sparrows. I shall be very sorry if we have to dispense with them, as they seem to cheer the monotony of our long winters. Perhaps our Toronto friend feeds them too highly. I would suggest that they be left to forage for themselves. They can get plenty along the streets and roads, which might suit them better than dainties from his table; and they might not then require a mixture of fruit buds to aid digestion. I might add that we have had them here two winters, and they do not seem to pay any attention to our bushes.

VISIT TO MR. JOHN BUTLER'S SORGUM FACTORY.

BY REV. R. BURNET, PRESIDENT F. G. A., HAMILTON.

On the morning of the fourth of October last I started in company with my friend Mr. Ramsay, of Mount Barker, South Australia, to see what we could learn of the creameries, cheese and Sorgum manufactories situated in the County of Oxford. Arriving at Ingersoll by train at an early hour, we found an old acquaintance, Mr. E. Caswell, ready to forward our views by placing his team at our disposal, and putting us under the direction of Mr. Finlay, an able and willing *cicerone*. The

day was all that could be desired in point of weather, and seven or eight cheese factories were speedily visited, and notes taken of the utensils and methods employed in cheese making. When a person has seen one of these factories, especially if it be on a large scale, like that of Mr. Hopkins', at Brownsville, he has really seen almost all that's worth knowing. In the absence of the master, Mrs. Hopkins entertained us right royally, and set before us a sumptuous repast.

From Brownsville to Mr. Butler's place, near Mount Elgin, is but a short drive, and we accomplished the distance almost too shortly. Mr. Butler is one of the oldest residents of this part of Oxford. If my memory serves me rightly, he has been settled there for nearly sixty years. A most enterprising farmer is the said Mr. John Butler. In carrying out his farming plans he uses quite a number of strings to his bow, and apparently almost all equally well. He is second to none in the neighborhood as a fruit grower, and if I may judge from the sample and quality set before us, he is no mean horticulturist. Then he makes capital cheese—famed all over for the excellence of their quality. Being a Devonshire man, it might be expected that he knew somewhat of apples, pears and cream. However that may be, he makes good cider, and is handy in compounding generally. Mr. Butler's Sorgum factory was, however, the great attraction to us. Under the head of "Sugar Cane," on page 11 of the CANADIAN HORTICULTURIST for January, 1880, will be found an interesting paper on Sorgum by a prominent member of the Board of Directors of the Fruit Growers' Association of Ontario, P. E. Bucke, Ottawa. Should any of our readers have overlooked this paper, they will perhaps permit us to call their attention to it. There they will learn the distinction between Sorgo, the Chinese Sugar Cane, and the Imphees, or African Sugar Cane; and also the origin of the Early Amber, the best variety, which originated in Minnesota. We found the manufacture of various varieties of the Sorgum in full blast. There was a sample of the Early Amber, from which great and good results were expected. The prominent object was the pressing mill, for grinding or pressing the cane. This machine was in every respect like a mill for thrashing corn. Two cylinders, separated from one another by a certain limited space, received the cane, a trough or pan caught the juice, and the bagasse or refuse stalks which have passed through the mill were removed to a short distance for feeding purposes. Two evaporators were at work,

one a fire evaporator and the other a steam one; on enquiry we found Mr. Butler gave the preference to the steam evaporator.

Syrup is the staple production, though sugar can be readily obtained by continuing the process of evaporation. Mr. Butler informed us that the charge for a gallon of his "Golden Amber Syrup" was sixty cents, and that an acre would yield at least 150 gallons. A rough estimate could only be made of the expense per gallon for making the syrup, it was thought from fifteen to twenty cents per gallon. Quite a number of farmers in the neighborhood had grown quantities of the Sorghum cane, and samples were lying about belonging to A., B. and C. waiting for their turn to be passed through the mill and evaporated to the syrup point.

Having been courteously entertained, and every desirable information imparted, we reluctantly bid Mr. Butler and assistants a kindly "good bye."

We have only further to add, that on page 14 of the same publication, and on the cover of the March number, will be found the prices for which, and the place where the Early Amber seed can be had.

CORRESPONDENCE.

WHAT IS THOUGHT OF THE FRUIT GROWERS' ASSOCIATION.

Mr. John J. Jarvis, Ingersoll, writes:—

"I have been a member for the last five years. I think it is the best dollar laid out through the year."

R. Baijant, Toronto, says:—

"I have felt much interest and gained valuable knowledge in the many excellent essays and notices on fruit matters in that most excellent monthly, the CANADIAN HORTICULTURIST."

FRUIT TREES IN ALGOMA.

W. Warnock, Blind River, says:—

"Almost any of the hardy apples do well on St. Joseph's Island and on the main Manitoulin, and some pears are doing well, but I have not learned what variety. No tree of any of the improved varieties has been planted on the north shore of the Georgian Bay until within two or three years. I have made enquiries of the settlers along the shore from Bruce Mines to the mouth of the Mississiga, a distance of over forty miles, and no one has seen a tree bearing yet, except one at the Bruce Mines, and that is a seedling. I made it my business when there to visit it, and found it growing in sod, and was told that it had borne regularly for five or six years, and that it had

never been winter-killed in the least. I think when we consider that the sod has remained unbroken all these years, and that the tree is exposed to the winter winds of Lake Huron, and yet presents a healthy appearance, it is good evidence that our prospects of fruit in the future are encouraging. Two miles from the mouth of the Mississiga River is a Frenchman who has a plot of seedling apple trees coming on finely; they are now three years old, and not one of them has ever been injured by winter frosts. We have a greater degree of cold here than in Huron County, but the growth is checked earlier in the fall, and the tree has time to ripen its new wood before the severe frosts come. When I came here last fall, the first of October, the Maples had shed their leaves, and I have learned that this is a peculiarity of the season here. I am satisfied that all the hardy varieties of apple trees and some pears will do well. We have here in the valley of the Mississiga a soil the most perfectly adapted to fruit growing that I have ever seen, and if the climate will prove favorable we shall in a few years produce the highest flavored apple on the east side of this continent."

THE BURNET GRAPE.

Richard Baijant, Toronto, says:—

"My Burnet Vine has done famously. It was allowed to ripen six bunches which it did to perfection. I felt sorry that I had not exhibited them at the Industrial Exhibition. The vine would have carried more bunches but I had regard to the summer of 1880. I left one bunch on the vine to see how far it would ripen, or gain in flavor or otherwise by being kept on to the latest, but having had some coal delivered that bunch disappeared. There were scores of bunches on other vines equally accessible, but they were not touched. Even my loss was a compliment to my Burnet. I suppose the look of it was too great a temptation. Mr. Marriott had also five or six bunches on his Burnet; when about ripe they were spirited away by boys who raided his garden, taking those alone."

REPORT OF THE ONTARIO SCHOOL OF AGRICULTURE FOR 1879.

The School of Agriculture, in a country whose prosperity depends so completely as does ours upon the judicious cultivation of the soil, is an institution in which every citizen has a deep interest. What is done and taught there will tell with tremendous power upon the future condition of this Province. The day has passed that held it to be quite immaterial whether the tiller of the soil was a man of intelligence or the reverse. We are now alive to the fact that the well informed cultivator has an immense advantage over the uninformed, and have created this School of Agriculture in order that those who till the soil, whether they be denominated agriculturists or horticulturists, may become well informed men in those things which bear directly upon their calling. This then is our apology for calling the

attention of our readers to the Report of this institution now before us. From an examination of this Report it appears that the instruction given at the School of Agriculture is eminently of a practical character, having always a bearing upon the business of the student's future life. And this instruction is given not only in lectures and class-room recitations, but by actual participation in the operations of the farm, where the principles and theories of the class-room are brought to the test of actual experiment. This is just the instruction needed. It strikes at the root of all unintelligent operations, and demonstrates to the student the value of a clear and comprehensive understanding of the principles upon which successful cultivation must proceed.

But it is to the experimental portion of this Report to which we wish to call particular attention. In this every cultivator in the Province will find much food for reflection, and many finger-posts to guide him in the way to success. Here is set forth the results of experiments conducted with accuracy, carefully watched and recorded, in the light of which we may the more confidently walk. As an illustration, we turn to the comparison of breeds of cattle during an experience of four years, on page 8 of the report of the Professor of Agriculture. We may seem to be not quite in keeping with a journal devoted to horticulture to treat of breeds of cattle, but those of our readers who can enjoy the luxury of a dish of nice strawberries "smothered in cream," and who think that the berries are all the more enjoyable because of the cream, will pardon the seeming incongruity, if indeed they do not maintain that there is after all a most beautiful harmony. Turning then to this comparison, we find that of the six breeds under trial, comprising the Short Horn, Hereford, Devon, Ayrshire, Aberdeen Poll and Short Horn cross, that the last named stands highest in prolificness, only second to the Ayrshire in quantity of milk, and second only to the Devon, the richest of all milkers, in the quality of the milk, enduring changes of climate best of them all; slightly less expensive to keep than the pure Short Horn, fattening even more rapidly, and coming to maturity only a little less early. Who then, that can keep only an animal or two, will longer hesitate where to look for one that he may expect will supply the needed milk for his household and cream for his berries? Interested sellers will praise the great milking qualities of the Ayrshire, but say nothing of the quality of the milk; or the richness of the milk of the Devon,

and low cost of keep, but will be silent as to the quantity. But here every one who has need to buy a cow, has information to guide him unbiassed by fear or favor, and upon which he can confidently rely.

We cannot forbear calling attention also to the experiments made with different fertilizers upon turnips, given at page 35 of the same portion of the Report, in as much as the results of these experiments have a very practical bearing upon the management of the garden. We have not the space in which to lay before our readers the history of these experiments, but must content ourselves with giving a few of the results, referring to the Report itself for fuller information. It appears that the value of the crop per acre, after deducting the cost of the fertilizer used, was in the case of bone dust, \$11.29; bone superphosphate, \$15.00; mineral superphosphate, \$18.07; salt, \$10.54; bone dust and salt together, \$24.10; farm yard manure alone, \$24.12. In this case the farm yard manure was valued at \$1.00 per load, the quantity applied being equivalent to fifteen farmer's loads per acre. Now the value of the bone dust and salt in its lasting effects upon the soil for the next year's crop is estimated at \$2.67, while that of farm yard manure is estimated at \$12.00. Thus we see that farm yard manure alone gave as good a crop of roots as the bone dust and salt combined, while its value per acre for the coming year is \$9.33 greater. Surely horticulturists may profit by this lesson, for although this experiment was upon turnips only, yet it teaches an unmistakeable lesson of the value of farm yard manure in the production of vegetables.

The experiment with twelve varieties of potatoes is also interesting to the horticulturists, from which it appears that under the conditions then and there existing, the yield of the Snowflake was the greatest in bushels, but the tubers were small; the Peerless gave no small tubers, though in quantity it fell behind the Snowflake at the rate of twenty bushels per acre, while the Late Rose fell behind at the rate of forty-eight bushels per acre.

There is another part of this Report which deserves the careful study of every land owner, we mean that relating to the planting and cultivation of trees, not fruit trees merely nor so much, as trees for shelter, ornament and timber. This subject has not yet received attention at all commensurate with its importance. But few persons are at all aware that there is any need of our planting what may be termed forest trees. We have been busy, very busy indeed, trying to

get rid of our forests. We have looked upon them as an impediment to the thorough cultivation of our farms, as an enemy to our progress, and we have waged against them a relentless war of extermination. To plant anew is to us like strengthening an enemy; nay, like bringing into life an enemy we have but just put under our feet, at the cost of many a weary blow and many a toilsome day. We are slow to believe that the destruction of our forests has been a mistake, and more slow to believe, even if it has been a mistake, that we shall reap any benefit from any planting that we can do to remedy that mistake. Yes, we do ask, of what benefit can such planting possibly be to me? Oh! for shame. Is there nothing better than to live for self? Has every noble sentiment so died within us that we can feel the constraining power of no other motive than self-interest? Do unselfish actions waken within us no response? Is there no pleasure to us in doing that which will be a blessing to those who shall come after?

“And, departing, leave behind us
Footprints on the sands of time;
Footprints, that perhaps another,
Sailing o’er life’s solemn main,
A forlorn and shipwrecked brother
Seeing, shall take heart again.”

But put this matter on the ground of self-interest alone, and it may be shown that the judicious planting and care of suitable forest trees in a proper manner is as surely remunerative here now, in this wooded Canada of ours, as any other investment. Professor Brown states that “it is no over-calculation to say that where the influence of trees is needed, the gain, after fifteen years, will amount annually to two hundred dollars on a hundred acre farm.” Of the value of the trees after they have been growing for fifteen years, or of such of them as may be profitably spared from the plantation, we have not now space to speak.

We conclude this most imperfect notice of this Report by expressing the hope that our agriculturists throughout the Province will give it a careful perusal, and avail themselves of the opportunity, which the instruction and experiments of this farm afford, of improving and perfecting their own practice. These laborious and expensive experiments are undertaken and conducted for our benefit, that we may spade and plow, plant and sow, and gather into cellar and barn, more intelligently and skillfully, and consequently the more profitably.

REPORT OF A SPECIAL MEETING OF THE GRIMSBY FRUIT GROWERS' ASSOCIATION.

BY LINUS WOOLVERTON, GRIMSBY, ONTARIO.

A special meeting of the Grimsby Fruit Growers' Association was held in the Town Hall, on Wednesday, March 31st, 1880, at 10 o'clock A.M., for the purpose of discussing (1) "The most profitable varieties of fruits for planting in this section," (2) "The Yellows, its nature and remedy," and (3) "The most desirable flowers for indoor cultivation." The attendance was very large and enthusiastic.

After the President, Mr. A. H. Pettit, had appointed a committee on fruit, consisting of Messrs C. P. Carpenter, Dennis Vanduzer and E. Moyer, the first question was taken up, viz: "The most profitable varieties of apples for cultivation in this section."

It was ably introduced by Mr. E. J. Woolverton, who read an interesting paper, in which he embraced the origin of the apple, its great importance as a staple fruit, and its longevity. It was on account of this quality of the tree that a most careful selection of varieties was so important to the planter. He thought very few varieties best for profit. He named five varieties as his choice, in the order of merit, for profit alone, viz: Baldwin, Rhode Island Greening, Northern Spy, Roxbury Russet and Swaar.

Mr. Dennis Vanduzer gave a list of about forty varieties he was testing. Among others he mentioned the Red Astracan as first for profit in his estimation. He picks over his trees nine or ten times, as fast as they color, and ships them by express. The Baldwin is the most profitable winter apple. The Swaar is a poor bearer and a miserable grower. The Wagner has too many mis-shapen specimens. Grimes' Golden, sent by the Ontario Association, is a slow grower; it bore twelve apples in 1879; fine dessert; good keeper, but he did not consider them profitable. His choice was, for summer, Red Astracan and Duchess of Oldenburgh; fall, Gravenstein and Colvert; winter, Baldwin, Greening, Northern Spy and Golden Russet.

Mr. L. Woolverton would only plant six varieties for profit, viz: in order of merit, Baldwin, Northern Spy, King of Tompkins County, Roxbury Russet, Red Astracan and Gravenstein. He valued the Spy and King because they yield yearly crops.

Mr. J. Carpenter would class the Lady Apple in a list of five varieties for profit. He had taken two barrels from one tree, and the price was very high.

Mr. J. R. Pettit counted the English Russet one of the most profitable apples he had tried.

Mr. E. Moyer finds too many culls in the Roxbury Russet. He would include the Colvert, Blenheim, Pippin and Twenty Ounce.

Mr. C. P. Carpenter would not advise planting fall apples for profit. Adjourned till 2 P.M.

In the afternoon session the second question was taken up, viz: "The most profitable varieties of peaches, new and old, for planting in the Grimsby section."

The subject was introduced by a paper written by Mr. L. Woolverton, which will be published in the next number.

Mr. A. H. Pettit said the grower for profit must have a constant succession. If he were planting an orchard of two hundred peach trees, he would plant as follows: Alexander, 10; High's Early, 10; Early Louise, 6; Early Rivers, 6; Hale's Early, 15; Early Purple, 5; Early Crawford, 40; Mountain Rose, 10; Early York, 6; Old Mixon, 10; Honest John, 5; Jacques Rareripe, 3; Morris' White, 5; Late Crawford, 25; Seedling of Late Crawford, (or Late Red Crawford), 10; Smock, 24; Lemon Cling, 10. He would leave out Barnard, but considers Hale's a most profitable peach; it can be marketed during a period of three weeks at good prices. Of the Old Mixon, he said, "I object to all white fleshed peaches for shipping." Honest John; "it is as its name imports, an honest, faithful bearer." Lemon Cling; "I think very highly of it for dessert and for canning whole, but would not plant largely on account of its clinging propensities."

Mr. George Cline found white peaches very poor for Hamilton market. He had found Early Crawford, Early Purple, Barnard and Smock pay him best there.

Mr. R. Griffith: "Early Rivers were very fine with me last year; they pleased me very much, and sold well."

Mr J. W. G. Nelles: "My Orchard is nearly all Lemon Cling by mistake, but they have sold very well at a good price."

Mr. Murray Pettit, Winona: "I place Smock first in order of profit for our heavy soil. For a period of five years I have received more money for the Smock each year than for any other kind I grow."

The Lemon Cling bears heavily, and generally brings a dollar per bushel more than Crawford's Early. Next to these I place Old Mixon, Hale's Early and Early Crawford."

Mr. Samuel Nelles: "I would give the Early Barnard preference over any other for profit. I would not give Hale's Early room in my orchard. My Beatrice loaded heavily last year; they were of good size, and marketed much better than Hale's Early."

Mr. Ransom Smith would condemn Morris' White and Late Crawford. He would name for profit Hale's Early, Lemon Cling, Smock, Early Crawford and Early Barnard.

Mr. Wesley Smith found the Hale's more profitable than any other; on his soil they grew to a fine size. He would also recommend the Early Rivers.

Mr. B. Nelles thought the Early Purple should not be passed over, for it bore crops when others failed. He said the Early Rivers grew to a fine size. Perry's July was not large, but very early. He counted the Early Barnard best of any for canning, having an excellent flavor.

Mr. Jonathan Carpenter said the Early Barnard was his favorite.

Mr. Orr, of Stoney Creek, said the fruit of Perry's July was small, and not to be compared with High's Early. On heavy red clay he had got one peck of Crawfords off a tree three years planted.

Mr. J. H. Grout thought Hale's Early had received more than its fair share of abuse; it had brought \$2.00 per bushel in the village last season without the trouble of marketing. He had seen beautiful specimens of the Alexander shipped from Grimsby during the past season, and he thought them worthy of much attention.

Mr. J. G. Teneycke finds all white fleshed very hard to sell. He said, "I can't give them away. I have received \$3.00 per bushel for Hale's Early more often than for any other kind. High's Early clings more than the Hale's. All those early ones are very small, and only sell well when there are few in the market. I can sell two bushels of Smock to one of Lemon Cling. I would plant Early Purple if I were in the vinegar business; and as for Stump the World, I would stump the world for a poorer one; it is too acid. It does not succeed here as it does in the south."

Mr. E. J. Woolverton said if he were planting 500 trees he would plant as follows: Alexander, 15; High's Early, 15; Hale's Early, 10; Early Purple, 10; Honest John, 5; Mountain Rose, 30; Early Craw-

ford, 300; Foster, 25; Old Mixon Free, 40; Late Crawford, 10; Lemon Cling, 30; Smock, 20.

The next question, viz: "The most profitable varieties of pears for this section," was introduced by J. G. Teneycke, who said he could not say much about pears for profit, but for fancy he might say a good deal. He would place the Tyson first among the summer varieties, and afterwards the following, in the order named: Bartlett, Beurre Bosc, Belle Lucrative, Beurre Clairgeau, Sheldon, Seckel, Howell, White Doyenne, Beurre d'Anjou, Vicar of Winkfield, Winter Nelis, Souvenir du Congres and Duchess d'Angouleme.

Mr. Thos. Orr fears to plant peaches for fear of the yellows, and pears because of the blight.

A good deal of discussion on the subject of the blight here followed.

Mr. Beverly Nelles did not think any variety of pear profitable on account of the blight.

Mr. Ransom Smith would not plant Osband's Summer, because it is the first to blight. The Duchess he had kept till Christmas.

Mr. L. Woolverton would name as fair profitable varieties of pears the following list: Rostiezer, Bartlett, Louise Bonne de Jersey and Duchess d'Angouleme. Meeting then adjourned.

The evening session opened about seven o'clock, when the subject of "The most profitable varieties of grapes" was introduced by Mr. Murray Pettit. He considered grapes the most important fruit we can cultivate for profit. He placed the Concord and Delaware first; they are among grapes what the Baldwin and Greening are among apples. Next he placed Rogers' 22, (or Salem), and next the Isabella, Rogers' 15, (Agawam), Rogers' 4, (Wilder). He counted the Isabella profitable because of its keeping qualities.

Mr. C. P. Carpenter named the Concord, Delaware, Rogers' 3, 4, 9, 15, Iona and Rogers' 22, (Salem).

Mr. Barnes, of Hamilton, condemned the Isabella; it does not ripen with him.

Mr. D. H. Grout said the Isabella was a grape of the past, only ripening about once in twelve years. The Catawba and the Diana both ripened well here.

Mr. S. Woolverton has Isabellas that ripen well on apple trees.

Mr. Ransom Smith placed Salem first for profit; it bears well, and brings the best price in the market.

Mr. Pettit said the Champion was poor in quality, but profitable on account of its earliness.

Mr. C. P. Carpenter thought the three varieties best for profit were the Delaware, Concord and Rogers' No. 4.

Mr. A. H. Pettit had picked a ton and a quarter of Concords off one hundred vines during the past season, and had received for them the sum of \$129.00.

Mr. Barnes gave the following as his list for profit, viz: Delaware, Rogers' No. 4, a good shipper, and keeps till March 1st in box with chaff; Rogers' No. 3 sells well in Montreal as a red grape; Rogers' No. 9 and 22. The last mentioned does not ripen well at Hamilton, but it ripens nicely at St. Catharines. The Concord he would place at the bottom of the list, because it is a poor shipper.

Dr. Read finds Concord injured by too high cultivation. He thought people pruned the grape too much, and would get better crops by longer pruning.

The next question taken up was "The Yellows, its nature and remedy." Dr. Watt being unable to be present, sent in a paper on the subject, which will appear in the next number.

Mr. Pettit had instances of it, but cut down the trees as fast as it appeared.

Mr. Jonathan Carpenter did not agree with Mr. Downing that Yellows are produced on poor soil; nor by poor cultivation, for it appears under the best cultivation. The U. S. Commissioner appointed to investigate the matter declares it to be a fungous growth, and hence the only remedy is the destruction of the trees.

Mr. Adolphus Pettit thought it spread from pollen. He had set some trees from the south about eight years ago, but the disease did not spread to other trees until blossoms were developed.

Mr. E. J. Woolverton agreed with Mr. Pettit, because a branch only is sometimes diseased; evidently the work of bees about blossoming time. He had cut down about 25 trees in his orchard of about 2,000.

In the absence of Mr. A. M. Smith, who was appointed to introduce the subject of small fruits, the meeting proceeded to take up the last, and to the ladies present the most interesting subject of the evening, viz: "The cultivation of flowers." Mr. J. H. Grout introduced this subject by reading a paper.

After some further discussion the meeting adjourned.

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VOL. III.]

JUNE, 1880.

[No. 6.]

THE MOST PROFITABLE VARIETIES OF PEACHES, NEW AND OLD, FOR PLANTING IN THE GRIMSBY SECTION.

BY L. WOOLVERTON, GRIMSBY, ONT.

As a matter of course I will place the *EARLY CRAWFORD* first among the most profitable varieties of peaches. More money may be made some years from very early or very late kinds, but the best variety of any fruit, other things being equal, is always the most profitable in the long run. I venture to say that you can place ten bushels of *Early Crawford*s in any town or village in Canada to one of any other kind. If growers were to plant as heavily of either the late or early kinds as they do of the *Early Crawford* the glut would be shocking to think about. I say *Early Crawford*, but I think this is a misnomer now-a-days, for since the introduction of so many earlier kinds, it occupies neither an early nor a late place, but the very middle of the season.

The second place for profit I give to the *OLD MIXON FREE STONE*, a very old, but a very deserving variety. Its qualities are equal to those of the *Crawford*, indeed it is almost perfection in points of flavor and appearance. It just succeeds the *Crawford*, and comes in so welcome to a grower after his hurry and excitement with his *Crawford*s. Those hot September days ripen up the latter variety so fast that it is almost an overwhelming task to get them picked, packed and marketed fast enough. Just then, when *Crawford*s are over-ripe for shipping, it is a pleasure to fall back upon the firm, beautiful *Mixon*, and find that it will command the top price in the market. It has no compeer. It does not begin bearing very young, but it outlives almost any other kind, and the older it gets the better crop it yields.

Third in order of peaches for profit in this section I would place the *EARLY PURPLE*. I am aware that some will differ from me in this,

but it has always been a favorite peach of mine. I believe it is our most hardy peach, often yielding a crop when others fail. Its season is the last week in August, just connecting the ripening time of the Hale's Early with that of the Crawford. It is a most regular and abundant bearer, and its delicately tinted purplish cheek and luscious flavor make it very popular as a dessert peach. Of course it is too soft for shipping far, and therefore cannot be grown profitably in very large quantities; for if you are a day behind in the picking you cannot ship at all, but for all that, I would not yield its place for any other of its season.

The fourth place I rather reluctantly give to HALE'S EARLY. If it would only get ripe without rotting, and not be so long about it, I would put it third in order of profit, for when well ripened and fully colored it has no rival in beauty of external appearance. To grow this variety successfully the fruit needs careful thinning when it is small, else the tree overbears, and the specimens are both small and unsaleable. I received the enormous sum of \$5.00 for twenty crates of this variety shipped to Montreal during the past season. Then again I have received the top price of the market for large, well-grown and well-colored samples.

Next in order among the old varieties for profit I would place the SMOCK. It is a free-stone peach and has a yellow flesh, but it has a somewhat musky flavor, and often has a very dull colored skin; indeed in unfavorable seasons it is almost worthless, and as soon as a better peach ripening at the same period is introduced, we may cease to plant the Smock. Nevertheless, it is an excellent bearer, and ripening as it does about the first week in October, it has the monopoly of the peach market.

I believe I have now named my choice of five varieties for profit among our old sorts. If I were required to give a more extended list, I would add to these, as number six in order of merit, the MORRIS' WHITE. This is the most popular of white peaches, and fills in a gap between the Old Mixon and the Smock. The flesh is white to the stone, somewhat firm, but juicy, sweet and rich. It commands a ready market.

I have passed over our Crawford's Late entirely. I have nothing against its quality, which is little inferior to the Early Crawford, but we are speaking of peaches for profit, and I do not think it deserves

to rank among our most profitable varieties, because it is such a scant bearer. I have also passed over the Honest John and the Early Barnard, old and familiar friends and good bearers, but surpassed in excellence by other kinds of the same period of ripening. I have almost always found the Barnards unsaleable when offered by the side of the golden Crawford's. Last year the Barnards were like the Hales, overloaded, and consequently too small to sell at any price.

I have made no mention of the Foster, Mountain Rose, Royal George and some other kinds, because I think there are more profitable peaches ripening at the same time with them.

I would place the LEMON CLING next after Morris' White for profit. It is a beautiful large yellow peach, and will always prove profitable for market in small quantities, but being a cling-stone it will never be demanded in large quantities. It ripens in this section about the end of September.

There is another old variety that comes about this time, the STUMP THE WORLD, that should perhaps be mentioned next. It is not much cultivated about Grimsby, but in Delaware and other peach sections it is highly valued. It is a free-stone, and a very large white peach with a bright red cheek. Its quality is very little inferior to that of the Old Mixon.

Among the new varieties, new at least to growers in this section, we will notice the Waterloo, Conkling, High's Early, Rivers' Seedlings and the Salway.

Of these the WATERLOO seems to stand* out foremost as the most promising of them all. It is a native of New York State, and it is only two years since it was fruited for the first time. It is said to be about three weeks earlier than the Hale's, and about one week in advance of High's Early Canada. The fruit is of large size, the skin is whitish green with a crimson cheek. Altogether it must prove a most valuable acquisition.

The CONKLING is another of the new varieties that deserves the attention of growers for profit. It is a native of Parma, N. Y., and Mr. Barry states that it was first fruited in 1873. It is large, with a beautiful yellow skin, and succeeds the Early Crawford. If it proves later and more prolific than the Old Mixon Free Stone it will be very profitable, otherwise little will be gained.

The Amsden's June, Alexander and High's Early Canada so closely

resemble each other that there is little choice among them. I am myself inclined to the HIGH'S EARLY CANADA, as being a native Canadian, and not inferior to the others. This variety then we would commend as at least second among the new varieties, if indeed it should not be placed before the Waterloo. Its beautiful color, good size and fair qualities combine to make it very saleable and very satisfactory.

The RIVERS' SEEDLINGS, viz, the Early Beatrice, Early Rivers, Early Louise and Early Silver were originated some years ago by Lord Rivers, a nobleman, in England, who ships large quantities of fruit to the London market. The Beatrice is a week earlier than the Hale's Early, but is not profitable in large quantities, because it is too small and too perishable. Last season I saw heaps of them wasting in Toronto, notwithstanding their earliness. The Early Rivers and the Early Louise have not yet been fairly tested in this locality, but the latter being of a pale straw, is, I think, too delicate and too easily marked to be profitable for shipping. I do not know that any one here has tried the Early Silver. It is two or three weeks later than the others. It is of a silvery color, and the flesh is white to the stone.

The SALWAY is also a stranger to most growers here. It is a very large yellow, free-stone peach, imported from England about fourteen years ago. It presents a beautiful appearance, and the quality is good, but its chief merit is its extreme lateness, for it is said to ripen just after the Smock. I do not advise planting many very late peaches for market. By the month of October people are about satisfied with peach eating; all canning, drying and preserving is over, and the market could easily be glutted.

Now to recapitulate. Were I asked to give the names of five old varieties of peaches most profitable for growers to plant in this section, naming in order of merit, from this standpoint I would reply, Early Crawford, Old Mixon, Early Purple, Hale's Early and Smock. If more varieties were wanted, I would add Morris' White, Lemon Cling and Stump-the-World.

Or if I were asked to give a list of the most profitable varieties of peaches for this section, new or old, naming them in the order of ripening, I would give the following list:—Waterloo, High's Early Canada, Hale's Early, Early Purple, Early Crawford, Old Mixon Free-stone, Morris White, Lemon Cling, Smock, and Salway.

THE "YELLOWs."

BY T. H. WATT, M. D., NIAGARA.

The disease called "yellows" in the peach, has taken quite a prominent place in the discussions of the various fruit associations; and to me it is a matter of surprise that any one taking an interest in the growth and culture of this most delicious summer fruit should be so lukewarm about so virulent and destructive a malady. To hear the various crude undigested ideas expressed, the ridiculous remedies advanced for its cure (which are purely imaginary so far) by orchardists, whose income, to a greater or less extent, is dependent on the health, fruitfulness and longevity of this tree—forgetting the fact that while they are quietly waiting for something to turn up, for a miracle to be worked for their benefit, the insidious disease is hidden in the soil, the spores of the same are blown by the wind in the fallen leaves, the pruner's knife is inoculating hitherto healthy trees; and I can easily imagine the diseased pollen being conveyed by bees and insects, all these acting as active agents to spread this dread disease which is taking possession of their orchards. How can this be stayed? We have tried to enlist the sympathy of the Legislative Assembly, so that those who would not destroy diseased trees might be compelled to do so. We have tried by ventilating this subject to call the serious attention of the orchardist to the risk he ran, and the cruel wrong he was doing not only his neighbor, but his own family, in this do-nothing case of infection. Now the only method is to arouse the public, through the medium of the press, to what are the symptoms of the yellows in the fruit as exposed for sale, (any quantity of which, I have heard, has been placed on our markets.) Look with suspicion on any variety of peach that comes to market before its real time of ripening; for Chas. Downing says in his work (which has all been fully endorsed by the practical experience of peach growers in the Niagara peninsula,) "that this disease causes the fruit to ripen from two to four weeks earlier than the proper season." The first season the fruit may acquire its size, the next, should the tree survive, the fruit will only be from a fourth to half its natural size. It is always marked externally (whatever may be its natural colour) with specks and large spots of purplish red. Internally the flesh is more deeply coloured, especially around the stone, than in its natural state. In many cases the red

colour of the external blotch will extend to the flesh—(it did in those cases that I personally examined.) Another symptom mentioned is that in freestone varieties the flesh is more or less adherent; and in all cases the fruit has lost its nice taste, in fact is worthless.

Mr. Wright, of Drummondville, told me that he and his family suffered from bowel complaint, having eaten some stewed peaches picked by his wife inadvertently.

Surely any government of a paternal character should at least impose a heavy fine on any one offering diseased fruit for sale, and cause its immediate destruction. He learned from what was said at Hamilton, at the Fruit Growers' Association, (by Mr. Woodward, the delegate from the Western New York Horticultural Society,) that it was in almost every section there. We also saw from the laws passed by the State of Michigan that they were alive and doing—the Ontario Association having tried to bring pressure to bear on the growers, and failed. I think it is now the duty of some one to bring this prominently before the public in the papers circulated among consumers, that they may guard themselves against growers and fruit dealers.

I have only given the *certain symptoms* of the "Yellows" in the fruit; this may be preceeded or followed or accompanied by yellow leaf, (from which it takes its name), and by the small wiry branches with small narrow leaves of an unhealthy character; but as the borer will cause an unhealthy leaf, and other causes, I should not feel justified in asking any one to eradicate and burn his tree unless the fruit symptom was also present, though for my own trees I should perhaps act on the principle that prevention was better than cure. I hope this paper may lead to discussion for the benefit of all.

REPORT.

FROM E. H. RYERSE, PORT DOVER.

The Wagner Apple and Grimes' Golden Pippin I grafted on large trees, and have had apples two years. The trees seem hardy and good bearers, but the fruit was so much inferior to several of our older kinds, that I cut the limbs out of the old tree and dug up the young ones. The Clairgeau and Clapp's Favorite Pears are growing nicely, but have not fruited yet. The Salem and Burnet Grapes both died;

the latter was broken off so it never came out. The Downing Gooseberry is a small bush, and the berry is sweet and nice. I have grafts of the Swayzie Pomme Grise Apple growing, but they have not fruited yet. Glass' Seedling Plum is doing well. The Diadem Raspberry died. The Strawberry is doing nicely, and I think it is the third best in my collection. Arnold's Ontario Apple died, but I have a graft growing. I have ten pear trees, most of them bearing; have had no blight except one limb of a tree was affected three years ago; I cut it off well below the affected part, and the tree has been as healthy as the rest of them since.

You accuse me, with the other members of the Association, of joining and belonging to the Association for the "bonus," as you call it. A paltry apple tree can be bought for fifteen cents; or perhaps a raspberry not half as good as we have in our own garden. I deny the charge.

I am an old man, and not capable of writing my experience, but I have cultivated fruit trees ever since I was fifteen years of age. I had my little nursery, and when I came on the farm where I live now, I planted out fifty trees, and have since at different times increased them to over one hundred, with the choicest varieties of apples; I had over fifty different kinds. I have since grafted and dug up, so that I have only twenty left, and that is twice as many as I want. I think five or six different kinds are enough for winter apples, and about the same number for fall use.

I do not see any good in sending out new apples or pears to the settled parts of Ontario unless they are superior to our old kinds. If you can get new hardy kinds to send north it is all well enough, but I do not want them here. I would rather have a house plant, berry bush, or a shrub—anything to remember you by. The HORTICULTURIST and the Annual Report are what I want.

My land is what we call sandy loam with clay sub-soil, and lays in the County of Norfolk, Township of Woodhouse, one mile from Port Dover.

NOTE.—It is singular how tastes differ. Many think Grimes' Golden Pippin the highest flavored apple we have. The Wagner apple is largely planted in Michigan for market, and is very popular in the markets of the western cities. Downing says that in quality they rank from "very good to best."—ED.]

REPORT ON PLANTS RECEIVED FROM THE ASSOCIATION.

FROM JOHN W. CUMMING, MONTREAL.

I see by the last No of the CANADIAN HORTICULTURIST, that members are expected to report on the plants distributed to them, and as I think I have omitted to do so, will no longer delay.

The *Burnet Grape* is the first plant I received two years ago, and planted it soon as received, in good soil, with old stable manure. In about six weeks after I wrote you for another plant, thinking it was dead; however, in a few days afterwards it burst through and grew rapidly four or five feet in length during that year. Next year I removed it out to St. Hilaire, and planted it end of April in a sandy and clay soil, manured it with bones, urine, &c., and had it carefully attended by an experienced gardener; but I did not think it grew vigorously, and had no fruit on it. I planted several other kinds on the same ground, and one of them (Hartford Prolific) had a bunch of ripe grapes on it the first year after planting. The Burnet seems to me slender in the stem, and not so vigorous a grower as some other varieties. If it does not bear fruit this year I will not think much of it.

The *Ontario Apple* received last spring was a splendid young tree, and grew vigorously. It is about eight feet high now above ground, has stood the winter well in an exposed part of the ground, soil sandy loam, and promises good growth this season. Many of my trees, (Fameuse) have had the bark split by the sun, but this one has not suffered at all from that. Altogether I am well pleased with the tree, and hope it will flourish in this colder locality.

I have an orchard of about 600 trees, mostly planted two years ago, principally Fameuse. The soil is a clay marl, and the *habitans* here (St. Hilaire) say that when the tap root gets into the clay in a year or two they will all die. What is your opinion of this? I can hardly believe it to be true.

Have any of our readers any experience that will enable them to answer this question? We cannot understand why an apple tree should be injuriously affected by clay soil. If the ground be wet and cold the tree will not thrive, no matter whether the soil be clay or sandy loam.—ED. HORT.

THE AMBER SUGAR CANE.

The interest which is taken by many of the readers of the CANADIAN HORTICULTURIST in the cultivation of this plant, is our apology for calling attention to the following letter from the *Western Rural*:

Having grown sorghum for the past twenty years, and been a manufacturer of syrup for fifteen, I hope what I may write from my own experience will prove a benefit to my brother farmers who are at present engaged in the culture of cane, and if so the object for which I write will be accomplished.

It is of the utmost importance to procure good, pure seed from cane which gave good results in quality and quantity of syrup and sugar. The best variety of cane that I have grown is the Minnesota Early Amber, which yields from one to three hundred gallons per acre.

Sandy land makes the best syrup. New land makes good syrup and a large yield. Clay land gives good syrup but light yield. Cane should not be grown on freshly manured land, as it always makes a poor article of syrup. It should be planted at least one year to some other crop before being planted to cane.

Plant with rows but one way, running north and south. If possible plant three and one-half feet apart east and west and fifteen to eighteen inches north and south. Plenty of seed should be planted and then thin out, so as to leave from four to six stalks in a hill. The ground should be ploughed at least ten inches deep and planted as soon as ploughed. One-half inch is deep enough to cover the seed.

As soon as the cane is up it should be hoed around the hill; great care needs to be taken to keep the hills free from weeds. When the cane is of sufficient height so the rows can be seen plainly, it should be cultivated, and this is best done with a five-toothed cultivator; the teeth should be small, or at least the outside ones, which allows one to get close to the cane and not cover it up. Cane needs no cultivating after it is three feet in height; indeed, cultivating after that injures the cane.

There are a great many different opinions in regard to the right time to cut cane. Some say cut cane when the seed is in the dough, while others maintain that it should stand until ripe. My experience is, that it will make more syrup if cut when seed is in the milk, and will granulate much sooner than when allowed to stand until ripe. Cane should be cut when the seed is in the milk or dough, and put under cover, letting it remain there ten days or two weeks before being worked. Cane can be kept one, two, or three months, if kept from freezing, without injury.

In making syrup I use the Climax Mill made by the Madison Manufacturing Co., Madison, Wis., and the Cook Evaporator manufactured by the Blymer Manufacturing Co., Cincinnati, Ohio. Both of these companies are held in high esteem by those who are engaged in the culture of the cane. Good machinery and good dry wood are two of the most essential things needed in making good syrup and sugar. Without these we may

expect poor results. Cane juice in its crude state contains a variety of impurities, such as fragments of cane, particles of earth and like matter that can be removed by filtration. As cane juice in its raw state contains a certain per cent. of acid which needs to be removed, this can be done by the use of lime. As cane that is grown on manured land contains a larger per cent. of acid, it can best be tested by litmus paper. A strip of blue litmus paper being dipped into cane juice will be changed from blue to red. Lime should be added until no tint of red appears. If too much lime has been added, by dipping a strip of the red litmus paper into the juice it will be changed from red to blue. More juice should be added until no tint of blue appears on the red litmus paper. No juice should be allowed to stand more than six hours; better to boil immediately after being ground out.

FIG CULTURE AT THE NORTH.

BY G. F. NEEDHAM, WASHINGTON, D. C.

The secret of growing figs in the Middle and Northern States lies in the fact that the wood must be ripened before it is laid down in autumn or it will rot. As with all deciduous trees, the leaves fall when the wood is matured. But if the frosts destroy the leaves the wood cannot mature. This difficulty is not confined to the north. A note before me, recently received from a fig grower in the State of Georgia, says: "All our fig trees were killed in the latter part of November, by a sudden cold snap which caught them in sap." Certainly it could not be worse at the north!

An old fig producer has said, "Only a little care is necessary to grow this fruit, but they must have that little." And no fruit of any kind can be grown without care and pains. Yet it pays. My pamphlet shows how easily figs may be grown. The fig will endure a cold of 40 degrees Fahrenheit, and one can make sure whether the thermometer will go below that figure before the next morning. Should the indications be that it will, the fig bushes must be covered with whatever may be at hand, brush, paper or cloth caps, boards, a barrel, etc., to shield them from the present cold. After one or two frosts we have mild weather, in which the wood will ripen, when they may go into winter quarters, as per instructions.

Reader, you can grow figs in abundance, and those just as delicious as the imported, for you can have them fresh.

THE REPORT OF THE FRUIT GROWERS' ASSOCIATION
OF ONTARIO FOR 1879.

This Report has been published and distributed to the members, and we presume that a copy of it has before this been received by each of the members of the Association. We are sure that it contains practical information of great value, and that the Report alone is well worth the annual fee paid by the members, and we trust that it will often prove to them a valuable assistant and guide. From among the many appreciative letters that have been received by the Secretary, we select to lay before our readers one that was received from the Hon. Marshall P. Wilder, President of the American Pomological Society, than whom there is no one more competent to judge of its merits. We do this not from any desire to glorify ourselves, but that our members may know the estimate put upon their report by a gentleman who has spent a life time in horticultural pursuits, and for full half a century has stood in the front rank among American pomologists.

Boston, March 28, 1880.

My Dear Sir,

I have received two reports of your Fruit Growers' Association, for one of which I am, I presume, indebted to your kindness. Thanks for it. I have perused it with great interest, and am happy to state that I consider it a remarkable document, evincing the great enterprise, care, and good judgment which characterize the fruit growers of Ontario. I have seldom read a report that contains so much pertinent, well-timed, practical and useful information. The address of the President is very able, as well as ornate, just what is needed on such occasions, gathering up the results and progress of the year. Your association is a noble, live institution, one of the best of our age. May God prosper it. Yours as ever,

MARSHALL P. WILDER.

CORRESPONDENCE.

CALLA CULTURE.

Jas. MacPherson, Brockville, Ont., writes :

The reason many fail with the African Calla is because they remove all the suckers, and keep them growing all the year. This is all wrong. Water should be gradually withheld from the middle of April, and the plants planted in the richest soil in the garden about the middle of May. They will then die down and rest, and start to grow about August. In early September pot in rich soil and keep growing, at a temperature of 50 to 70 degrees Fahrenheit.

DISAPPEARANCE OF INSECTS.

C——, Orillia, Ont., writes :

We used to have in this neighborhood a very beautiful little beetle which frequented *Apocynum* in considerable numbers. Color, the brightest green, with golden reflections. Of course there can be no connection between the two insects, but it is a strange coincidence that in the same year that saw the arrival of the Colorado Beetle, this one totally disappeared, and none had been seen since until the end of last summer, when I observed a very few on their favorite weed.

GLASS' SEEDLING.

Geo. H. Dartnell, Whitby, Ont., writes :

This plum has made free growth, requiring free pruning. It fruited two plums last season, of large size and handsome appearance. The foliage is very handsome, large, and of a dark green. I had a large crop of other plums, with not the slightest trace of *Curculio*.

RASPBERRIES AND STRAWBERRIES.

Of the plants received from the Association, the buds of the raspberries were destroyed before arrival. The strawberries were in such a bad state that with all care they did not survive the summer.

THE BURNET GRAPE

Made a vigorous growth of nearly four feet before the month of May, 1878, when the frost of that date killed it to the ground. It again shot forth, and shows now two fine stems, and will probably fruit this year.

PEARS.

No signs of the slug this year or of blight. The slug was very bad the two previous years. I dusted the trees with dry earth, or sifted coal ashes, with good effect.

THE ONTARIO APPLE.

The Ontario Apple was received in good order, and has made fair growth.

My garden is a small one, and the varieties are chiefly dwarfs. Soil medium clay. I manure chiefly with sifted coal ashes, rotted manure and superphosphates.

I think the directors of many of our Agricultural Societies would do well to submit their horticultural prize list to the Association. Many of them are absurd, and tend to encourage the growing of varieties long discarded for better ones.

ARRANGEMENT OF LAWNS.

From the Michigan Farmer.

Happy indeed ought to be the possessor of a wide, sloping lawn, on which the turf is thick, soft and elastic, and such an expanse of verdure may be made yet more beautiful by exercising a little taste and skill in planning and arranging the shrubbery. Too often the beauty and grace of the whole is spoiled either by a superabundance of flowering plants and shrubs, like "Ossa upon Pelion piled," or else by the queer fancy that every tree must be duplicated, each shrub must have its counterpart on both sides the prim unswerving walk from front door to front gate. Flower-beds on strictly geometrical principles only are permissible, and the whole effect to an artistic eye is as pleasing as a patchwork bedquilt. Nature never works in this wise; she flings a wild vine here, a rose-bush there; two or three shrubs of different species grow in loving juxtaposition, but she never duplicates or repeats herself. To many eyes, the unbroken sweep of greensward is more charming than if its expanse were broken by any object, however beautiful, while others prefer to mingle flowers and foliage plants in picturesque confusion. Many plants are far more beautiful in the emerald setting of deep green grass than in the flower garden proper. Among these, the Pæony ranks high, its large, deep red blossom and lighter hued leaves contrasting finely with the darker tint of the surrounding grass. A double scarlet Zonal Geranium, if planted where it is partly shaded, will keep in bloom, by a little attention in the way of a drink now and then, nearly all summer, and its vivid scarlet is ever charming. But a new departure is a "grassy bed," in which grasses of various colors and kinds are intermingled with Lilies and Gladioli, and various other plants, to vary the light foliage of the former, and give effective relief to the glow of the Gladiolus, and the pallor of the Lily. Those who can devote a large circle or capacious oval in a place upon their lawns where it is in full view of the windows, will not regret such an arrangement. Just a breath of air, on a serene summer morning, will stir the light feathery grasses, and give that movement to the group that adds life to its beauty. No matter if the bed is partly shaded, it will do no harm. In the highest part may be planted the Tritoma, or "Red-hot Poker," as it is sometimes called. The tropical looking Yucca, with its tall spike of flowers, is fine in such a location. The Pampas grass is beautiful, but will not endure our northern winters, but its twin, Erianthus Ravennæ, is perfectly hardy. The Arundo has golden-yellow striped leaves, and grows six feet high. Next to these may be planted Lilium Longiflorum, a spotless oval of purest white, the fretted spires of the Gladiolus, and the pale yellow of the old fashioned Lemon Lily, so well known but so universal a favorite. There are places too for the Euphorbias, whose curiously margined leaves suggest its common name, "Snow-on-the-Mountain," and which is more strictly a foliage plant, but may be used here with good results; also for the broad corn-like leaves of "Job's Tears," *Coix Lachryma*. Near the edge of the bed we may have *Briza maxima*, one of the very best of the ornamental grasses, and also *B.*

geniculata, a smaller variety. Among these may be planted Tulips, "the wine-cups of the sun," as Southy calls them. A pretty dwarf grass may form a margin about the bed, and among the roots may flourish "fair yellow Daffodils," red and white daisies, garden cowslips, or the nodding Cyclamen.

It is possible that some who read this may be appalled at so distinguished an array of lengthy appellations, sigh, and say, "Can't do it, but I'd like to." Try it, and see what good results you can produce at a very small expense. Select some tall growing ornamental plants for your centre piece, invest half a dollar—even less than that—in the seeds of grasses, which may be obtained at any florists, and even if you have but two varieties of grass, the effect of these with the brilliance of Gladioli, a root or two of Crown Imperial, Tiger Lilies, and the feathery bloom of Spiræa, cannot fail to give entire satisfaction; and the fortunate possessor of such a "grassy bed" may also "lay the flattering unction to their souls" that they have something quite new, and different from the stereotyped arrangements of bedding plants, so long "the rage." There is something very delightful about these beds of grass and flowers, the airy grace with which the winds take liberties with the long waving grass; and in contrast between the untrained natural freedom of their growth and the formal regularity of shrubbery taught to grow by rule.

On large open lawns a very beautiful effect may be obtained by purchasing a quantity of Crocus bulbs, and planting them irregularly over its surface. Before the last snowbank is fairly out of sight, the white, blue and yellow blossoms will dot the lawn like stars, and as the leaves die down very soon after flowering they are entirely unnoticed during the summer months, but are on hand each spring to hail the return of "etherial mildness."

THE GREGG RASPBERRY.

We clip from the *Western Rural* the following account of the introduction of this new black cap raspberry, written by J. W., Aurora, Indiana:

The following is the true history of the origin, name, first cultivation and introduction of the Gregg raspberry. This most remarkable variety of the black raspberry, doubtless by far the most popular and best for market, culinary, canning and drying purposes in existence, originated about four miles south of this city, on the Gregg farm, on the ridge between Langbury and Armoles creek, in Ohio county. It was found during its fruiting season in 1865 or '66, and removed to a piece of ground prepared for it by Messrs. R. & P. Gregg, in the corner of one of their fields, near their residence, where it was first brought under cultivation. They were brought to me at the post-office (I being postmaster as I am now.) They were examined by quite a number of persons besides myself, and greatly admired for their beauty, large berries, and enormous sized clusters. They were pronounced by all a new and remarkable variety. I then noted the

fact of its discovery, first cultivation, and a brief description of the fruit, which I reduced to an article, that was published, entitled "The Gregg Raspberry." In that article I christened it the Gregg, in honor of the gentleman who saved it from nature's waste basket, into which doubtless many valuable varieties of fruit have been negligently cast and lost.

This berry before being introduced to the public in the fall of 1874, when plants were first disposed of for cultivation, had received a thorough and searching test at home. Its managers, the Messrs. Gregg, after having for several years cultivated it, in July 1872 sent a cluster of its fruit to the Clarke and Floyd Counties Horticultural Society, where it met with almost unbounded favor. The action of the society was published at the time in the *Indiana Farmer*. They next brought it to the notice of the Indiana State Horticultural Society. In 1873 the society in its published report gave it a very high commendation. In July 1876 they put it on the tables of the Cincinnati Horticultural Society, where it was unanimously pronounced the best black raspberry ever exhibited before the society. In 1876 they prepared drawers of sufficient depth, and lined the bottoms and sides about two inches thick with wet moss, into which they inserted the stems of the clusters of berries, which served as a kind of cushion, and kept the berries moist and cool, putting two or more drawers together like ordinary fruit cases, and in this way they expressed several shipments to the Centennial Exposition, a distance of about 700 miles, where they were received and exhibited in as good condition as when taken from the patch.

QUESTION DRAWER.

(1.) What is the most effectual way of destroying the Caterpillar on currant and gooseberry bushes? I am aware that there are some very effectual remedies, but being poisonous would not like to use them. You may perhaps know of something which would not be poisonous to persons, but at the same time would destroy the insects.

We have not found any inconvenience to result from the use of hellebore, which, though poisonous to man in considerable quantity, is washed off the currants and gooseberries long before they are fit for use. The Saw-fly Caterpillar makes its appearance very early in the season, and if the hellebore is promptly applied as often as a brood is hatched, they will be all gone many weeks before the fruit is ready for use, and the rains will have washed off all trace of the hellebore. We know of nothing that will meet these Saw-fly larvæ so certainly and promptly as white hellebore.

(2.) Also, the most effectual way of destroying the striped and black bugs on cucumber, melon and squash vines?

We have found Scotch snuff sprinkled on these plants as soon as they appear above ground, and repeated as often as it is washed off by

the rain, sure to keep off the striped bug. It does not kill them, but keeps them away. The black or Stinking Bug is not so easily driven off. The only way known to the writer is to watch the insects closely, and catch and kill every black bug as soon as it appears, and carefully examine the underside of every leaf, both in order to find the bug and to find the eggs, which latter need only to be rubbed off and allowed to fall on the ground to perish. This is the only *effectual* method known to the writer, and it is not as troublesome as it may seem, for the egg-laying season is soon passed, and if none of the eggs are allowed to hatch there will be no bugs to destroy the vines. It is the young brood that do the mischief, not the parent bugs, in the way of sucking the life out of the vines.

C. R. Matthew, Clinton, writes:—

I have a dwarf apple tree which I find this spring month with what I suppose to be sun scald. The bark on the smooth side of trunk just above the collar is blackened, split and loosened from the tree. What shall I do with it? Had I better apply to the diseased spot pine tar, or shellac, or linseed oil; which would be best? And if applied, should the loosened bark be removed first?

Remove the loose bark from the tree, and apply a thick mortar of fresh cow-dung and clay; then bank up with earth, to keep it moist.

An esteemed correspondent writes:—

BLACK-KNOT.—I wish you would state in the *Horticulturist* who are the parties to apply to in order to have the act relating to Black-knot put in force. There is considerable of it here, and some parties will not attend to it until compelled to do so, and I want to know the best way to get at them.

The Statute, 42 Victoria, chapter 53, sec. 3, provides that any municipal corporation in Ontario may appoint an officer or inspector for the purpose of carrying out the provisions of the act; and if no such inspector be appointed, it shall be the duty of the Overseer of Highways, upon request of any person interested, to give notice in writing to the owner or occupant to cut out and burn up the Black-knot, unless he shall be satisfied upon inspection that the disease does not exist in the place complained of. If after two weeks notice the owner or occupant knowingly suffers any Black-knot to remain, he shall upon conviction, be liable to a fine of not less than one nor more than five dollars for every such offence. The offence shall be punished and the penalty recovered on conviction before any Justice of the Peace, and the fines paid into the treasury of the municipality in which the offence takes place.

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[No. 7.]

THE SHARPLESS STRAWBERRY.

This new variety of strawberry has attracted so much attention, and seems to possess so many points of excellence, that we have sought to give the members of our Association not only a verbal description of the fruit, but a nicely executed colored representation. Through the politeness of Messrs. Ellwanger & Barry, who were the first to call attention to this new fruit in western New York, and who had a cut made of it expressly for their catalogue, this cut has been placed at our service, and we are thus enabled to present it to you with this number of the CANADIAN HORTICULTURIST. Of the excellence of the execution it is quite unnecessary to speak; the plate itself invites inspection and criticism. That it is faithful as a correct representation of the fruit is of more importance to our readers, and we can assure them that it was carefully drawn from nature, and by no means exaggerates in any particular. It represents a single truss, and shews the usual relative size of the berries.

This new strawberry was raised from seed in 1872 by Mr. J. K. Sharpless, of Catawissa, Pennsylvania, and bears his name. The Pennsylvania Fruit Growers' Society thought so highly of it that they gave a colored plate of the fruit in their Report for 1878, and speak of the plant as being vigorous and luxuriant in growth, hardy and prolific, while the fruit is described as being firm in flesh, with a delicate aroma, and first in quality.

The berries are large, often very large. In the summer of 1878 the nurserymen held their midsummer meeting at Rochester, and among the berries of this variety which were exhibited at that meeting was one that weighed an ounce and a half, and that measured seven inches in circumference.

The plant has a good reputation thus far for hardiness and vigor, and for abundance of yield, the crops being represented as large under ordinary treatment. It is very natural for any of us to give a little

extra care to a new fruit which we are testing, and it may be that the ordinary culture of some fruit growers would be quite extraordinary with others. Yet the current of testimony is to the effect that it is a productive variety.

In point of flavor it ranks high, all who have given their opinion agreeing that it is among the first in quality. Messrs. Ellwanger & Barry do not hesitate to say that it is "the best strawberry now in cultivation." The fruit is borne upon long trusses, but the weight of the berries is such that they are bent to the ground.

We have not yet fruited this variety, and therefore can not speak from personal acquaintance with it in our own grounds; but such is the high estimate formed of it by gentlemen who are competent judges of the merits of any fruit, that we are constrained to believe that it is well worthy of the attention of strawberry growers, and especially of gentlemen who grow them in their gardens for their own tables.

THE GRAPE VINE FLEA-BEETLE.

Professor J. Henry Comstock, of Washington, District of Columbia, writes to the New York *Tribune* concerning this little, but sometimes troublesome insect, that he has been making some experiments in the way of killing it when numerous. His communication is as follows:

The Grape Vine Flea-Beetle (*Haltica chalybea*, Illiger) has been one of the most formidable enemies that the grape growers of this country have had to contend with. The only redeeming feature about it is that it seldom appears in the same locality in great numbers during consecutive years. These beetles leave their hibernating quarters in April, and attack and destroy the young leaf-buds as soon as they appear; later they feed upon the leaves which have escaped their earlier ravages, and deposit their eggs upon them. The eggs are of an orange color, and soon hatch into small chestnut colored larvæ. These larvæ also feed upon the leaves, and when they appear in great numbers sometimes strip the vines of their foliage. After a month of active life the larvæ descend to the ground and bury themselves near the surface, where they make cells of the earth and change to pupæ of a dirty yellow color. The adult beetles issuing in the course of a few weeks, again feed upon the leaves during the autumn, doing, however, but little damage, and later seek their winter quarters beneath the bark and splinters on the vines and the stakes which support them, as well as under any rubbish that may be in the vineyard,

This week specimens of this insect were brought me by Mr. A. R. Phillips, of this city, with the statement that his vineyard in Virginia is

infested with them to a perilous extent. I at once sent Mr. L. O. Howard, my first assistant, in company with two others to the vineyard in question for the purpose of experimenting with remedies. Mr. Howard's report was very gratifying. Finding it impracticable to jar them from the vines into sheets or other receptacles, and keep them there, he hit upon the plan of drenching the sheets with kerosene; this worked in a most satisfactory manner. The mode of procedure is as follows: Take two pieces of common cotton sheeting, each being two yards long and half as wide; fasten sticks across the ends of each piece to keep the cloth open and then drench with kerosene. Give the sheets thus prepared to two persons, each having hold of the rods at opposite ends of the sheets. Then let the persons pass one sheet on either side of the vine, being careful to unite the cloth around the base of the vine; then let a third person give the stake to which the vine is attached a sharp blow with a heavy stick. Such a blow will in nearly every case jar the beetles into the sheets, where the kerosene kills them almost instantly.

This process, after a little experience, can be performed almost as rapidly as the persons employed can walk from one vine to another. The expense necessary is very trifling, and boys can do the work quite as well as men. Warm bright afternoons are the proper times for this work to be done, and it should be performed faithfully every sunny day until the vines are out of danger. This mode of combatting the beetle promises to be much more effectual than any other which has been hitherto suggested; for it can be used early in the season before the vines are seriously injured and before the insects have begun to multiply. In connection with the above, the remedies which have been recommended often should, if necessary, be used. These are as follows: First, all rubbish should be removed from the vineyard, and the stakes and trellises which support the vines be well cleaned of bark and splinters, so as to afford the beetles little chance for hibernating in the vineyard. Second, if the larvæ appear in great numbers, lime should be sifted over the vines.

LIQUID MANURE FOR PLANTS.

Some time ago there appeared in one of the English Horticultural periodicals the following recipe for making liquid manure that could be safely applied to growing plants without danger of injury. It was as follows: Put a bushel of the clippings of horses' hoofs into a barrel and fill it up with water. Let it stand for a week, when it is ready for use. Apply it with a watering-pot. All bedding plants can be watered with this liquid every other day, if they are not pot bound. Repotted plants should be watered once a week until they have plenty of working roots to take up the manure. It will also be found excellent for hard-wood plants if used once or twice a week. Two or three weeks after the plants have been watered with the

manure water, the foliage generally changes from a green to a golden yellow, moving from the stem down to the point of the leaf, which, however, lasts only for a few weeks, when it changes to a dark, glossy green. Plants under this watering grow very strong, and the flowers are very regal and bright in color. Plants thus treated can be kept in very small pots for a long time without being transplanted.

We find this recipe now going the rounds of the American journals, credited to a Baltimore florist, who seems to say as the result of his experience that this liquid manure, applied in the manner mentioned above, is especially advantageous to market gardeners, enabling them to sell plants grown in three and four-inch pots as large and attractive as those shifted into five and six-inch pots, when only rich soil is used. It is added that plants grown in this manner by the use of this liquid fertilizer, will bring twenty-five per cent. more than those grown in the ordinary way; having this additional advantage, that being in smaller pots they can be packed closer, will weigh less, and can be easier handled. It is also claimed that this fertilizer is not a stimulant but a plant food, and that plants which have been watered with it will not fail when planted out, but will continue to grow and keep in growth, which is not the case when they have been stimulated with guano, while it is claimed that it is as quick in its action as guano, fully as powerful, and more lasting in its effects.

Further, it is said not to do the slightest harm to the foliage, should it come in contact with it; that it does not form any crust on the pots or soil, and that it is cheaper than any other good fertilizer which is used in a liquid form. The hoof clippings do not require to be renewed oftener than twice a year, even if the water is drawn off and filled up again every day. If liquid guano is used too strong, it will cause the plants to drop their leaves, but this liquid can be used even twice a day for a short time without injury to the plants.

CORRESPONDENCE.

THE AGRICULTURAL COMMISSION.

MR. EDITOR,—In looking over the *Daily Globe* of the 12th instant, I was very much interested in the Report of the Agricultural Commission, and was very much pleased to see the growing interest taken in the science of Horticulture, for a science it is, and the more it is studied as such the more thoroughly it will be practically appreciated by the farming com-

munity of our country. In your examination before the committee, in answer to the various questions proposed—one of them was the time required to bring the different varieties into bearing—you instance the Red Astrachan and the Duchess of Oldenburg, but forgot our precocious little Wagner; and then go on to notice other varieties, the Spy among the rest. Now, just here comes in my object in sending you this “clodhopper” article for your consideration. In my little experience of fruit raising, I have observed that both climate and soil have a large influence in determining the time necessary to bring the different varieties into bearing. You say the Spy requires ten years. On my farm, situated at the base of the limestone ridge in the County of Halton—a calcareous clay soil—the Spy came into bearing in seven years. On A. T. Springer’s farm, at Burlington, they are hardly in full bearing at thirteen years, on a sandy loam and under the most favorable climatic conditions. In the County of Simcoe, nearly forty-five degrees north, I have seen Spys that have been planted nearly twenty years and have never borne fruit yet. On the same kind of soil, ten miles north of Barrie, I have seen the finest specimens of Fameuse that I ever saw grow, and the trees breaking down with the weight of fruit. I think that soil, climate, altitude, contiguity to large bodies of water, and constitution of different varieties, largely determine whether fruit trees are fruitful or sterile. For instance, no one at all acquainted with the subject would ever think of planting a Baldwin in a climate where the thermometer sinks 25 deg. below zero; yet it is very frequently done in the County of Simcoe. Of course the trees die. Unfortunately, the farmers are often duped by interested, unscrupulous agents, who, in plain English, don’t hesitate to lie.

You mention the Spitzenburg as one of the best; and so it is. Yet no tree is more capricious in its choice of soil to be able to produce the finest quality of fruit. In your book on Horticulture you say it is a poor grower. When I read it I was astonished. On my farm it was the most rapid grower in the orchard, so much so that although they were planted twelve yards apart, the branches were interwoven and produced the finest fruit. Take for instance the Roxbury Russet, which comes to the finest state of perfection on a sandy loam. On my farm, under the highest cultivation I could give it, it was a miserable failure.

Some fruit growers are quite mystified when some one or more of their Greenings that have been grafted on natural stocks come to bear, find them small and inferior both in size and quality, and wonder how it is, not knowing that some kinds are very much influenced by the natural stock. So much is the Greening affected by the parent stem, that if the natural fruit is very small you cannot by any amount of cultivation or trimming produce a large sized apple. Graft a Greening on a Fall Pippin stock and note the difference. The Rambo is influenced in the same way, but in a less degree.

What we want in Ontario is a well written essay on the subject of orchard culture, published in pamphlet form, so as to be within the reach of every one. First, on preparation and kinds of soil; secondly, locality, exposure north or south; shelter, how best secured, and in what way;

thirdly, the proper kinds to cultivate under the different climatic conditions, and also to specify the mode of culture on the many varieties of soil, and the kinds most suitable to each; fourthly, the absolute necessity of thoroughly fencing the orchard, and of allowing no animal inside of the gate larger than a hog, to graze; fifthly, and lastly, an orchard should be well drained, either under-drained or surface-drained. No grain of the cereal kind should be allowed at any time; and after coming into regular bearing, the rule should be invariable, to be content with one crop.

Now, my dear sir, you may think me impertinent in thus addressing you on a subject which I so very imperfectly understand, and what I do know was acquired under very disadvantageous circumstances. Having never seen you but once, two years ago, when I was sent to select an orchard for a gentleman in the county of Simcoe, I was very unfortunate at the time, having caught a severe cold, which made me so hoarse I could not converse with you on my old *hobby*. I need hardly say how disappointed I was when I could neither ask nor answer a question.

My reason for thus addressing you is to suggest that something should be done to awaken public interest in a matter of so much importance to the welfare of the horticultural department in Ontario, which under scientific culture would be second to none, at least in apple cultivation, not even leaving out the plums.

THOS. COUTES.

DOUGALL'S NEW SEEDLING LILACS.

BY JAMES DOUGALL, WINDSOR, ONT.

You kindly copied into the January number of the *CANADIAN HORTICULTURIST*, for 1879, an article of mine from the *New York Witness*, on "Raising new and fine fruits, &c., from seed," in which mention of these lilacs was made.

I now send you cut blooms of some of the best, which I have so far thought worthy of naming; but quite a number of others, out of several thousand seedlings—some of which have only bloomed this year for the first time—are nearly equally good.

I cannot add much to the above mentioned article, but as propagators of new varieties are apt to think too highly of their own, I wish you to be able to judge whether the descriptions given previously were too highly colored or not. You will, therefore, confer a favor by giving your opinion of the different varieties sent. Some of them were past their best, and others were taken from plants more or less stunted from being lately transplanted, so that the spikes of flowers were not as large or high-colored as if grown to perfection, or as they were in former years. "Queen Victoria" and "Princess Louise" were only half their usual size from this cause.

NOTE.—Owing to the pressure of engagements, we were not able give special notes of each variety. The Double Purple attracted us by the

novelty of a double lilac. The flowers seemed to be compound—one issuing out of the other. In truth, all were beautiful and worthy of their royal names: Prince of Wales, Princess Alexandria, Albert the Good, Princess Beatrice, Princess Louise, Marquis of Lorne, and Queen Victoria. We hope these new lilacs will be very extensively planted for the adornment of our Canadian homes. Mr. Dougall deserves the thanks of every Canadian for his enterprising efforts to introduce Canadian grown varieties of such hardy, beautiful and popular ornamental shrubs, and we hope his labors will be appreciated.

THE BOTANICAL SOCIETY.

BY JAMES MACPHERSON.

I have noticed some sixteen names of ladies and gentlemen announced in your November number for 1879 as being interested in the formation of a Botanical Society. Since I have known anything of Canada I have often wondered how it happens that it is the only British possession of any importance which fails to figure botanically. I cannot to-day offer myself a better explanation than the supposition that the Americans have not led the way in any very striking manner. It is a fact that no complete flora of North America is extant to-day; the flora of the States can only be had in a fragmentary condition. The Americans are a "practical people," and do not concern themselves about abstract sciences very much. It may, however, be pointed out to Canadians that Australia, Cape Colony, India, New Zealand, Hong Kong, (Feijee even has a published flora,) have all established from one to five or six Botanical Gardens within their limits, and their Governments have arranged with the authorities at the Royal Gardens at Kew for the publication of their approximately complete floras. Why British North America alone is without a Botanical establishment it is hard to tell, or without a published flora more complete than Hooker's "*Boreale Americana*."

Now, I would suggest that the sixteen persons who are interested influence sixteen M. P.'s, and secure their action in the very next session of the Dominion Parliament towards establishing a Botanical Garden on the ground which the Government may acquire at Niagara Falls.

I had the honor to suggest this to His Excellency the Governor General some time ago, and understand my communication was referred to the Government, but of course no action can be expected unless some public interest is expressed in the matter.

It is unnecessary to urge the importance of such a garden to any of your readers at this or perhaps any time.

LATE FROSTS AND STRAWBERRIES.

We notice in the June number of the *Fruit Recorder* some notes made by Mr. Purdy with regard to the chances of different sorts of strawberries escaping injury from late spring frosts, which are of great value to persons wishing to grow strawberries in localities that are subject to them. The popular Wilson strawberry so generally grown for market is very liable to injury from this cause, so much so that Mr. Purdy states that with his present experience if confined to but one strawberry for family and marketing purposes he would plant the Wilson at his present place of residence, yet would not think of planting it at South Bend in Indiana.

With regard to the following notes it may be stated that when the blossoms are well protected by the foliage the danger of injury from late frosts is very much lessened, and that the letter following the name of the variety indicates the character of the flowers, H. standing for hermaphrodite or perfect blossoms, and P. for pistillate or imperfect blossoms, they being without well developed stamens.

The following are Mr. Purdy's notes, and they are well worthy of the attention of those who intend planting strawberries and wish to secure varieties the least liable to injury from late frosts.

CHARLES DOWNING, H.—Comes through winter strong and hardy. Fruit stalk short, leaf stalk long. Splendid show for fruit on both sandy and heavy strong soil; one-fourth the blossoms opened, three-fourths not yet opened—well protected by the foliage.

PROUTY, H.—Winters well, leaf stalk medium, fruit stalk short. Mass of fruit buds on plants growing on sand and clay loam, one-fourth blossomed out, three-fourths not opened yet—quite well protected by foliage.

WILSON, H.—Winters well; leaf stalk short, fruit stem long; immense show for fruit on all soils. Blossoms nearly all opened and ready for complete destruction should Jack Frost come, but if he will let them alone the crop will be very large.

TRIUMPH DE GAND, H.—Winters well. On a hard clay knoll fine show for fruit. Leaf and fruit stalks about the same on the average; one-third blossomed out, two-thirds unopened.

RUSSELL'S ADVANCE, H.—Winters splendid. Soil strong clay and light loam. Tall leaf and fruit stalk; one-half blossomed and one-half unopened. A wonderful show for fruit, and green fruits formed as large or larger than any sort on our grounds. We are so pleased with this sort that we are now, late as it is, setting out every plant we have to set.

WINDSOR CHIEF, P.—Hardy as a burr oak, and hence winters splendidly. On strong rich loam and poorish gravel showing a mass of fruit buds. Tall leaf stalk, short to medium fruit stems, and well protected by the mass of foliage; not more than one-fifth blossomed out. One of the safest.

CHAMPION, P.—On same plot, close to the last, similar as to leaf and fruit stalk; though fruit stems taller and more fully blossomed out.

CINDERELLA, H.—Winters splendidly. Tall leaf and fruit stalk; half blossomed out. We have no sort on our place that has a greater show for fruit, and that we are more pleased with, judging from present prospects, hence are making another large setting of them. We have it on sand, gravel and clay loam, and it is equally fine on all. Part of the blossoms are well protected by leaves.

DUCHESS, H.—Half hardy. Leaf and fruit stalk medium; great show for fruit; largest share blossomed.

JUCUNDA, H.—Half hardy. Short to medium leaf stalk, tall fruit stalk: one-third to one-half opened. Fair show for fruit on strong soil, light show on sandy soil.

KENTUCKY, H.—Winters splendidly. Tall leaf and fruit stalks—leaves, however, overtopping most of the fruit. Not over one-fourth blossomed out. Fine show for fruit on all soils.

BOYDAN'S 30, H.—Hardy. Medium to tall leaf and fruit stalks; leaves overtopping most of the fruit. One-third to one-half blossomed. Great show for fruit on all soils.

MONARCH OF WEST, H.—Hardy. Similar to last in fruit and leaf stalks, but not so fully blossomed out.

NUNAN, H.—Half hardy. Medium fruit and leaf stalk; largest share blossomed out; partly protected. Good show for fruit on strong and light soil.

PHILADELPHIA, P.—Hardy. Tall leaf and fruit stalks. Half protected by foliage; one-half blossomed out.

LENNING'S WHITE, H.—Hardy. Tall leaf stalk and short to medium fruit stalk; one-third blossomed out. Fine show for fruit on strong rich soil.

METCALF, H.—Hardy. Short to medium leaf stalk, medium to tall fruit stalk. Four-fifths blossomed out; enormous show for fruit, and that too, all early, but wo be to them if Jack Frost comes to make them a visit. Equally as good on all soils.

DOWNER'S PROLIFIC, H.—Hardy. Medium to tall leaf stalk and medium fruit stalk, but not so great show of blossoms as last, but larger proportion not yet blossomed out.

CRESCENT, P.—Hardy. Medium to tall leaf stalk, short to medium fruit stem. A perfect mass of fruit buds and stems on all soils, and not one-fourth blossomed out, and these well protected by foliage. One of the safe kinds against late spring frosts, and hence a sure crop for every year.

COL. CHENEY, P.—Hardy. Medium leaf stalk and short to medium fruit stem. Great show for fruit on all soils, and not one-fourth blossomed out. One of the safest against late spring frosts.

CONTINENTAL, H.—Half hardy. Short leaf and fruit stalks; one-fourth blossomed out. Fair to good show for fruit.

CUMBERLAND TRIUMPH, H.—Hardy. Rank, healthy foliage, medium leaf and fruit stalks; one-fourth blossomed out, and well protected by the rank growth of leaves. Great show for fruit on strong, new soil.

GREEN PROLIFIC, P.—Tall leaf stalk, medium to tall fruit stem. Well protected by the large, broad leaves; but one-fourth blossomed out. Prospect for large crops on all soils. One of the safest against Jack Frost.

CRYSTAL CITY, H.—Hardy. Tall leaf stalk and medium to tall fruit stem. Immense show for fruit on rich loam. Two-thirds to three-fourths blossomed and mostly protected by leaves. One of the safest early sorts.

FOREST ROSE, H.—Hardy. Short leaf stalk and tall stem; not well protected, but not over one-third blossomed out. Fine show for fruit on strong soil, but light show on light, poorish soil.

GLENDAL, H.—Hardy. Oh! here we have the safest of all from late frosts, and we don't wonder this variety has grown heavy crops in northern Ohio, when most others have failed, or nearly so. Medium to tall leaf stalk, short to medium fruit stem; dense foliage; literally covered with fruit buds and blossoms. Scarcely a blossom as yet out. Push aside the leaves and what a mass of fruit-stems and buds just beginning to open. Wonderfully glad that we have so largely increased our plantations of this sort. From present appearances it's the safest sort on our place to plant against late frosts, hardiness, and as a late kind.

PIONEER, H.—Half hardy. Similar to Triumph de Gand as to leaf and fruit stems. On strong, rich soil, shows good prospect, but on gravelly sand poor prospect.

MINER'S GREAT PROLIFIC, H.—Hardy. Here too is a wonderful

show for fruit. Medium to tall leaf and fruit stalks; blossoms one-fourth to one-third out, and quite well protected from frost by leaves.

SHARPLESS, H.—Hardy. Medium to tall leaf stalk, and tall fruit stem; one-third to one-half blossomed, and well exposed to Jack Frost. Good show for fruit; but as we have dug plants out of the rows so clean, to sell, leaving only the original plant, of course it damages the fruiting, and hence we cannot fully judge as to their productiveness. The hills that are left have four to five strong fruit stalks well filled with blossoms and green fruit.

NICANOR, H.—Hardy. What we say of the Metcalf holds good with this sort.

CENTENNIAL, H.—Half hardy. Medium leaf stalk and short to medium fruit stem. Fine show for fruit; half blossomed; partly protected by leaves.

PRESIDENT LINCOLN, H.—Half hardy. Weak Plant. Short fruit stem, and medium leaf stem; half blossomed; partly protected.

CAPT. JACK, H.—Hardy. Almost identical in leaf and stalk to Wilson's. Immense show for fruit, and nothing to prevent Jack Frost making havoc. Two-thirds to three-fourths blossomed out.

DUNCAN, H.—Hardy. Similar to Wilson's, though a larger show of fruit buds protected by leaves. Best show for fruit on strong soil.

SHAKER, H.—Hardy. Fruit and leaf stalk medium to long. Fair show for fruit on gravelly soil; not one-fourth blossomed out.

GOLDEN DEFIANCE, P.—Half hardy. Medium leaf stalk, short fruit stem. Have it only on gravelly soil. Poor show for fruit.

REEVE'S LATE PROLIFIC, H.—Hardy. Medium leaf stalk, short fruit stem. One-third blossomed; well protected, and good show for fruit.

NEW DOMINION, H.—Half hardy. Medium fruit and leaf stalks. Grand show for fruit; one-half blossomed out.

BLACK DEFIANCE, H.—Hardy on gravelly soil. Medium leaf stalk, short to medium fruit stem. Good show for fruit; one-third blossomed out.

EARLY ADELIA, H.—Weak grower. Tall leaf stalk, medium to tall fruit stem. One-third to one-half blossomed out.

LAUREL LEAF, H.—Hardy. Tall leaf stalk, medium fruit stem. Fine show for fruit; half blossomed out. Partly protected.

As a rule, those kinds having taller leaf than fruit stem, and least blossomed out, are safest against late spring frosts. Those being largely blossomed out are earliest—though this rule does not hold good with every kind. We shall, in fruit season, give time of ripening of all, so that by comparing that article with this, full information on this fruit may be had.

Bear in mind too, that it is not always late frosts that kill green fruit and blossoms, but they are often blighted and blasted by long cold north-east winds, and of course those most exposed suffer the most.

FRUITS IN WYOMING COUNTY, STATE OF NEW YORK.

It is the custom of the Western New York Horticultural Society to appoint a committee on fruits in each county, and to expect from the Chairman of that committee a report at the winter meeting. The following report, prepared by Mr. Hugh T. Brooks, Chairman of the Wyoming County committee, is well worthy of careful perusal, and will afford much food for reflection. It will be found equally applicable to many counties in Ontario.

WYOMING COUNTY.

Wyoming County don't bother much with small fruits, probably because it is a large county. We have scarce anything under cultivation smaller than pumpkins, except apples. We had plums, but when the black knot and the curculio put in their claims, we gave them up quietly, rather than have a fuss about it.

We have here and there pear trees of native breed, set by our forefathers when the country was new; they are healthy, like the men who planted them, but not one farmer in five puts out any of the new sorts. In most of our families they are forbidden fruit.

Peaches, often very good ones, raised from the stone, are among the recollections of our childhood, but of late not one family in twenty makes an effort to grow them. They miss the virgin soil, the shelter of the woods, and we fear suffer from unnatural methods of propagation. Mr. Look, of Wyoming, mentioned in our last report, and who died since, grew them successfully, proving plainly that there are warm, dry, sheltered, elevated positions in the country where peaches would grow if the worms were killed and they were otherwise cared for; especially if some virgin soil was put about their roots.

An enterprising fellow-citizen some years ago heard of strawberries, and judged from reports (probably circulated by nurserymen) that they were good things to have; so the next time he went somewhere he brought home some vines. He put them in a rich place, tended them well the first year—folks generally do—they grew and blossomed finely, but not a single berry—not one! He didn't swear—Christians are not expected to—but he wanted to very bad. He said he expected to be cheated from the first; he was warned against tree peddlers and the like; he ought to have known better than to chase after new things; there was a time when farmers stuck to their own business, and he should do so for the future. Prof. Zenas Morse, of Hamilton Academy, learned in horticulture and all sciences, was induced to come among us, and explained that our friend's strawberries were the "Staminate" kind—a sort of bachelor brotherhood, which, left to themselves, never amount to anything anyway. Col. Cheney came to the rescue, invented a new kind, offered to tell everybody how to raise strawberries, raised them himself, claiming that as land was not scarce in Wyoming County, there was no good reason why we should go to

Rochester, as we had always done, for our berries, whenever our religious necessities called for a church festival. It was all of no use. Wyoming people ain't caught twice in the same trap; they now keep pretty much clear of the strawberry business. It is apparent, even to the most casual observer, that they can't be grown without much labor. That of itself should condemn them as a domestic institution. We are willing to work, and to work hard, but we want to work for something that will bring money—something that will buy more land.

It is agreed in our county that small fruits must take care of themselves. Blackberries and black raspberries conform to our arrangement. They set themselves out in the spare places, and do everything but pick themselves. If your society wants to do anything respectable they will get up a sort that will pick themselves. Our women pick them now, but we are sorry to say our modern women are not what their grandmothers were; they don't meet their responsibilities so cheerfully. Coming in about noon in a hot day in July with a few berries, they are apt to remark, and sometimes rather tartly, "It don't pay to ramble all over creation for a quart of berries, when they can be raised in the back of the garden in half the time." We get along pretty well with that, but when they make a wider circuit just in the rear of another foraging party, and come in tired and hungry with a dozen berries, we think it better to go out and hoe those beans immediately.

We all had currant bushes that took care of themselves and gave us plenty of rather small currants; but finally the worms ate them all up. Professor Morse told us to give the worms hellebore, but the skeptical folks said they didn't believe there was any such medicine, and the orthodox said they would not waste it on worms.

We have a small, sour, red cherry, good for cooking and preserves. We have it because a sprout came in with the pioneers, grew and multiplied in spite of us. On the principle of "the survival of the fittest," it ought to be the best cherry. It always survives, always sprouts, and makes a free nursery for the neighborhood. There are three objections to it: First, it is not fit to eat; second, it will not carry itself around and set itself out as well as raspberries and Canada thistles do; third, instead of growing like a currant bush it grows higher than women can reach; and since, from the force of circumstances, they are bad at climbing trees, we are obliged to furnish a boy to pick the cherries. As it is all the kind we have, we wish to speak well of it.

Our villages furnish exceptions to these statements. Clergymen don't abjure the good things of this life as much as their sermons lead us to suppose. As for lawyers and loafers, they take all they can get. Only the farmers and day laborers, who rise at four o'clock in the morning, finish their chores at nine o'clock at night, and go to bed worrying about the next day's business, confine themselves to bread and butter, pork and potatoes, with apple sauce and mince pies on Sunday, and a dessert of sour cherries once a year.

Continued in August No.

MIDSUMMER AND AUTUMN FLOWERING SHRUBS AND PLANTS FOR THE DECORATION OF GARDENS.

BY WILLIAM C. BARRY.

Many, if not the majority of gardens, which in the spring and early summer charm the eye and gladden the heart with a profusion of flowers become all at once, as autumn approaches, almost destitute of bloom. This is not surprising, when we consider that the greater number of shrubs and plants flower in May and June, and that the late flowering species and varieties are not, comparatively speaking, numerous nor sufficiently well known to be duly appreciated or properly employed. Some persons are accustomed to regard this annual change as a natural consequence, and make no attempt to extend the flowering season, while others more observant having noticed that there are gardens which, even during the summer months, exhibit a wealth of flowers, are prompted to inquire, and questions are often put to us in this way :

What can I plant to render my garden beautiful and attractive in autumn?

It is gratifying to note that during the past few years considerable interest has been manifested in this subject, and in response to many inquiries I have prepared a brief list of choice fall flowering shrubs and plants, which, if judiciously used, will render the surroundings of our houses exceedingly attractive during the autumn months.

I would direct attention first to the

ALTHEA OR HIBISCUS SYRIACUS,

commonly called the Rose of Sharon, a most remarkable and valuable shrub, which, as it were, holds its blooms in reserve until there is a notable scarcity of flowers. Whether in the mixed border among other shrubs or isolated upon the lawn, the Althæa when in flower produces a charming effect, relieving the monotonous aspect which prevails in most gardens at this season, and enlivening the landscape with its bright flowers. It must be admitted that the blooms of this shrub lack delicacy of texture, brilliancy and purity of color, but when there is a dearth of flowers we must not be too critical. Seen from the bush, its coarseness cannot be detected, and that which to some eyes appears to be a defect or blemish, serves on the contrary only to enhance its value for out of door decoration. We must recollect that coarse flowers have their offices to fulfill as well as the delicate ones. Besides considerable progress has been made in improving the Althæa, and amateurs will be pleased to learn that the new varieties are quite in advance of the older sorts. Among recent introductions *Boule de Feu*, which produces large double flowers of a violet red color, can justly command admiration. *Duc de Brabant* with very full flowers of reddish lilac color may also be regarded as an acquisition, while *Leopoldii flore pleno* with large, double flesh-colored blooms, together with *Totus albus*, having single snowy white flowers, are, I think, all destined to become favorites as soon as known. A few of the older varieties, like the *Double*

Variegated or *Painted Lady*, *Pæni-flora*, and the *Double Red*, cannot yet be dispensed with. They flower from the first of August till the first of October. In this latitude an objection is sometimes raised to the *Althæa*, because it is said to winter-kill in severe seasons. This occurs, however, only with young plants or with specimens recently transplanted, which are not yet fully established. Young plants should be protected with straw or evergreen boughs the first and second winter after being set out, and as soon as they are well rooted they become perfectly hardy.

Another real treasure which all plant lovers esteem highly, on account of its many good qualities, is the

HYDRANGÆA PANICULATA GRANDIFLORA, OR PLUMED HYDRANGÆA,

Planted singly or assembled in groups or masses, it becomes in August and September, when in full bloom, a real curiosity to many, while to others fully impressed with its magnificence, it is a noble object deserving the highest praise it is possible to bestow on any hardy plant. A circular bed of this shrub occupying a prominent position on our lawn has been the object of so much attention every year that I furnished a brief description of it for the *London Garden*. The plants composing the bed were in full flower on my return from Europe two years ago, and I wrote the editor, Mr. Robinson, that notwithstanding the many remarkable and effective beds of flowering and fine foliage plants which I had seen abroad, I thought nothing equalled this. "The mass consists of thirty-five plants, with a broad edging of the *Coleus* 'Shah' around it. The contrast between the green grass, the crimson and yellow foliage of the *Coleus*, and the immense white and pink panicles of the *Hydrangæa* was novel and beautiful. I have often seen and admired large single specimens of this *Hydrangæa*, but masses like this are uncommon, and I call attention to this manner of planting, as it tends greatly to heighten the effect and increase the attractiveness of this noble shrub." A few hints relative to its culture and management may not be amiss. Being a robust, rank grower, and a very free bloomer, it requires to be well fed. The more food the larger will be the panicles, the greater their number, and the longer they will remain in perfection. I think that I do not exaggerate when I say that most cultivators actually starve this plant, and this fact explains why fine specimens are not oftener seen. A top dressing of the very best manure should be given the plants every fall, and in spring as early as possible it should be incorporated with the earth by means of the spading fork. During the dry summer weather, when the earth around the plants is apt to become hard, it should be loosened and made mellow. If drouth should prevail at the flowering period, which is generally the case, then apply water liberally every evening. Another important operation connected with its management is the pruning of the plant every spring. This should be performed early, say in March, before the sap begins to move, and the stem should be cut back within two or three buds of the old wood. These will then push forth vigorously at the growing season, and every shoot will produce a panicle of flowers. If these directions are observed the result will be surprising.

Next in importance are the

TALL PHLOX, OR PHLOX DECUSSATA.

These, when properly grown, are unquestionably the finest of autumn flowers, and in the hands of a tasteful cultivator can be made to furnish very satisfactory results in garden ornamentation. Latterly, for some unknown reason, they have not been so popular as they formerly were. On the continent of Europe they are at present held in the highest estimation, and new varieties are being constantly raised from seed, many of which I am pleased to say show great progress. The Phlox has many qualities which commend it for the garden. It is of vigorous habit, easy culture, and produces in great profusion, during a long season, flowers of fine form and substance and of bright and varied colors. Just as the Roses are fading, the Phlox puts forth her first flowers, producing a fine succession of bloom, and prolonging an interesting season at least six weeks.

As regards their culture, it may be briefly stated that they succeed in any good garden soil, but they are greatly improved by being liberally manured, and an occasional supply of liquid manure during the growing season will greatly increase the size of their trusses. When in flower they should be watered freely every evening. The Phlox usually flowers in July and August, and in order to render it autumnal flowering it is necessary to pinch the shoots about the first of June, and again in July; the plants will then flower in September. For early flowers some of the plants may be left unpinched. When two years old the finest trusses are produced. The third year the plants flower tolerably well, but they will not keep healthy and thrifty after that. The old plants should then be lifted in the fall, divided and transplanted. But the better plan is to keep up a succession of young plants from cuttings by securing a fresh collection every spring.

THE JAPAN ANEMONE,

admitted everywhere to be one of the finest hardy perennials, stands in the foremost rank among plants for autumn decoration. The species called Japonica grows about three feet high, and bears on long footstalks very pretty purple flowers measuring two inches across. A fine variety of the Japonica named *Honorine Jobert* resembles it in habit, but has snowy white flowers. These, when planted together as companions, produce a fine effect by their contrast. The plant is of such neat, compact habit, demands so little care, is so hardy and beautiful, and bears such an abundance of flowers, that it is sure to become quite popular wherever known. On large lawns a grand circular bed may be formed by planting the center with the white variety, followed with a broad ring of purple around it, then another circle of that fine fall flowering Sedum—spectabile. It is difficult to describe the beauty of beds of this character. They must be seen in all their glory of an autumn day to be fully appreciated. How much more sensible to spend time and money on permanent beds like these, rather than to devote so much to soft-wooded bedding plants which are of such short duration. With the great variety of hardy bedding plants at our disposal, pleasing combinations may be multiplied at will, and beds once well made will be constant objects of pleasure.—*To be continued.*

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THE SUMMER MEETING OF THE FRUIT GROWERS' ASSOCIATION.

The summer meeting was held in the City Hall, Guelph, on Tuesday and Wednesday, July 6th and 7th, 1880.

There was a goodly representation present from various parts of Ontario, extending eastward to the County of Renfrew and westward to Lambton.

The President and Vice-President being absent, the Secretary called the meeting to order, and stated that the President had removed his residence since our last meeting to Pictou, Nova Scotia, and that he had received a telegram from the Vice-President saying that he would not be able to be present, which the Secretary feared was owing to the ill-health of our much esteemed Vice-President, a letter having been received from him a short time ago in which he expressed fear lest his health should not admit of his attendance at the meeting.

P. E. Bucke, Esq., of Ottawa, was called to the Chair, and after the reading of the minutes of the winter meeting, the Association proceeded to the discussion of the question, "Which varieties of Strawberries are least injured by the late frosts?"

In reply to this inquiry it was stated that as a matter of course the later any variety came into bloom the more likely it would be to, escape the spring frosts, but that usually the late blooming varieties were also late in ripening. Also that those varieties which had an ample supply of foliage reaching above the fruit stalks were less liable to suffer, because the leaves, in some measure at least, protected the blossoms.

Mr. Gilchrist remarked that they were very liable to have late frosts at Guelph, and that he had not observed any marked difference in varieties with regard to their ability to resist frost, or to the blossoms escaping the effect of the frost by reason of being protected by the

leaves, but that if the variety happened to be in full bloom at the time the frost came, the fruit was mostly destroyed; yet if it had blossomed long enough before to admit of the berries having attained to that stage of their growth when they are turned down towards the ground, the fruit mostly escaped injury, as also did those varieties which were not yet in bloom. Notwithstanding the fact that the Wilson blossoms are not protected by the foliage, it was the variety that strawberry growers relied upon in that locality for profit.

Further conversation on the subject failed to bring out anything definite with regard to the varieties of strawberry which suffered least from spring frosts, and the meeting adjourned, to meet at the Experimental Farm in the afternoon, and at the City Hall in the evening.

The President and Professors received the Association with great cordiality, and did all in their power to make their visit agreeable and instructive. After giving the gentlemen a birds-eye view of the farm from the top of the main building, they conducted them over that part of the farm which is devoted to fruit and garden culture, and explained the nature of the planting already done, and what has been commenced this spring of fruit and forest tree planting for educational and experimental purposes. A field of twenty acres has been set apart for fruit culture, with the expectation that ultimately it will be occupied by trees of apple, pear, plum and cherry, and in the meanwhile afford ample room for the cultivation of small fruits, other than grapes, for which a field of some five acres will be set apart. These fruits are intended to afford the institution a continuous supply of fresh fruit for consumption, and the means of examination, comparison and experiment as a part of the instructions given to the pupils.

A commencement has also been made in forest tree planting, beginning with the sowing of tree seeds, and the gathering of young trees from our own forests and planting them in rough land that has never known plow, with a view of illustrating what can be done by every farmer in the way of supplying himself with trees for ornament, shelter and economical purposes.

The members were also shown the fine specimens of some of the most valuable breeds of cattle and sheep, which have been imported for the farm, thus enjoying an opportunity of examining and comparing different breeds not often to be found. In this way the afternoon was

passed both very agreeably and profitably, and the members returned to the town in time for the evening meeting, most favorably impressed with the educational advantages of the institution, and the courteous hospitality of the officers.

It is gratifying to learn that the farmers are taking an interest in this School of Agriculture, and that already several thousand have visited the grounds this summer as a pleasant holiday excursion for their families, and have shown their appreciation of what is being done there for their benefit by paying a visit to the institution; and, although sometimes coming in considerable numbers at a time, not a shrub, or plant, or flower, or fruit was touched.

EVENING SESSION.

After appointing Messrs. Leslie, Beall and A. M. Smith a committee to examine the fruits on exhibition, the meeting listened to a paper from Mr. B. Gott, Arkona, upon the fruit prospects of the County of Lambton, in which he stated that this year there was likely to be not merely plenty of fruit, but a superabundance, so that orchardists are already looking out for a market. The crop of strawberries was unusually large. One grower reported having gathered from half an acre fifteen hundred and sixty-eight quarts, which he sold at an average price of nine cents per quart. Raspberries, currants and gooseberries are just ripening in great abundance, and of most admirable quality. Some simple method of preserving these summer fruits for winter use is much needed in this section. The apple crop will be plentiful, but not over-abundant. There will be some very fine pears this year, especially of Bartletts and Flemish Beauty, but the crop will not be very large. The supply of plums will be amazing, both in quantity and quality, and the crop of peaches promises to be the largest known in this county for many years—so great indeed that it will be impossible to obtain a sufficient market for them in that locality. The season was one of extreme and unusual earliness; fruits are ripening fully two weeks in advance of their usual time of ripening. Crops of all, except apples and pears, are unusually fine and abundant, and there is a more than usual immunity from insect pests.

Mr. Gott received the thanks of the meeting for his interesting paper, which he was requested to hand to the Secretary for the Annual Report.

RASPBERRIES.

The question, "What Raspberries succeed best in the vicinity of Guelph?" was considered. It appeared as the result of this discussion that the Philadelphia was the most hardy of the red varieties, but that in order to secure a crop with any degree of certainty from any variety it is necessary to cover the canes in winter.

Mr. Elliott had been quite successful with Clarke, Philadelphia, Franconia, Herstine and Brinckle's Orange when he gave them winter protection, but thought the red and white raspberries could never be profitably grown about Guelph because of the necessity of giving them winter protection, and the labor and expense which that involved.

The black-cap raspberries were perfectly hardy, and could be grown without difficulty.

GOOSEBERRIES.

Some very fine English varieties are grown about Guelph, and the testimony of the raisers was that by planting in strong clay soil, keeping the bushes well pruned up from the ground and well thinned out, so as to admit of a free circulation of air, they did not suffer much from mildew. Others had not been so fortunate in their attempts to grow the English varieties, Mr. Gilchrist stating that he had tried some thirty different sorts, but that they mildewed so badly he gave it up, and now plants Smith's Improved in preference to other varieties.

FORESTRY.

The question, "What are the economical uses of woods, other than pine, and what are their respective commercial values?" In answer to this question Mr. Beall stated that at Lindsay he had noted the following facts:

Black Ash was used for making hoops and in carriage building, and was sold at from \$8 to \$10 per thousand.

White Ash was largely used in the manufacture of agricultural implements, and to some extent in house finishing, and sold at \$15 to \$20 per thousand.

Beech had no commercial value other than as firewood.

Butternut was used in the commoner kinds of cabinetware, and brought from \$10 to \$14 per thousand.

Basswood was employed in making common chairs, seats, buggy bodies, &c., and was worth \$8 to \$12 per thousand.

Birch was used to some extent in connection with Maple for flooring, also for stair railing, bannisters, &c., and varied from \$12 to \$20 per thousand.

White Cedar sold for fence posts, railway ties, telegraph poles, canoes, &c., at from \$16 to \$20 per thousand feet.

Elm was employed in the making of heavy sleighs and cutter work and was worth about \$12 per thousand.

Hemlock was made into scantling, railway ties and rough boards, and brought about \$6 per thousand.

Maple was manufactured into axletrees, flooring, implements, &c., and sold for \$16 per thousand.

Larch was used for poles, ladders, and sometimes for flooring, and was worth \$12 per thousand.

White Oak was employed in making heavy wagons, &c., and brought from \$20 to \$25 per thousand.

Red Oak brought only \$15 per thousand when of the best quality; such was sometimes used in cabinet work.

Black Walnut was not indigenous about Lindsay, and probably on that account commanded a high price, running from \$100 to \$120 per thousand.

The meeting thanked Mr. Beall for the very valuable information he had given, and the remainder of the evening was spent in conversation upon the uses to which our various woods were put, and the constantly increasing cost of many of them, owing to the diminishing of the supply and the increasing demands of an increasing population.

MORNING SESSION.—July 7th.

At the opening of this session the Secretary read a letter he had recently received from one of our most prominent pomologists, Mr. James Dougall, Windsor, accompanied with a photograph of a new weeping cherry that had originated on Mr. Dougall's grounds, and a branch laden with fruit taken from one of his new seedling cherries, named by him the Windsor. In this letter Mr. Dougall states that the Windsor is a very prolific and valuable market fruit, the specimen branch sent being from a young tree that is bearing for the second

time, and is literally loaded with fruit, all the branches being fully as well and some much better loaded than the branch sent.

The Secretary stated that he only regretted the branch had not been received a little later, so that he could have brought it to this meeting, for it was certainly the most profusely covered with fruit that he ever saw. The cherries, though not *very* large, were of fine size, and seemed to be quite firm fleshed. They were hardly ripe enough to enable him to judge of the flavor. He should think that if any variety of cherry would be profitable as a market sort this certainly would take the lead.

He also exhibited to the members the photograph of the Weeping Napoleon which he had received from Mr. Dougall, which was taken last year, and remarked that the fruit sent him from this tree had become mouldy in the transportation, and that he could not speak of its quality. The fruit did not seem to be as large as that of the Windsor, and was darker in color.

Mr. Dougall states in his letter that the origin of the weeping variety was a side shoot from the stem of a Napoleon Cherry, that grew out below the graft and bent down to the ground. Some trees were budded from the shoot, one of which being worked up high grew to be quite a large tree, the others being budded at the ground never could be got to grow into a tree. The one from which the photograph was taken was budded subsequently at nearly six feet high, and shows a most perfect and beautiful weeping habit.

The Secretary also read a letter from Mr. A. Hood, Barrie, in which he regrets his inability to send to the meeting some fruit of a cherry tree growing in the grounds of Mr. J. R. Cotter, of Barrie, which he describes as being a forest growth, though the fruit bears no resemblance to the common wild cherry, and as being perfectly hardy in that climate and productive. He thinks the tree worthy of attention, because the fruit is superior to anything else that is equally hardy, healthy and vigorous.

Mr. Hood states that he thinks fruit will be a failure in his section—plenty of blossoms, but little fruit. Plums in particular, from some cause or other have set very little fruit, and the curculio has put in his mark on what little there is.

The meeting expressed their thanks to Messrs. Dougall and Hood

for their kindness in bringing these matters to their attention, and referred the letters to the Secretary for incorporation in the Report.

The Chairman, Mr. Bucke, of Ottawa, opened the discussion upon "The advantages of tree growth and shelter on climate, rainfall, and the protection of growing crops," with an interesting paper, for which he received the thanks of the meeting, and which will be published in the Annual Report.

The time was fully taken up in the discussion of the importance of planting trees for shelter, and the several kinds of trees, native and foreign, that may be cheaply and profitably planted.

It was stated that in many places a demand had sprung up for soft woods, such as basswood and poplar, for the manufacture of pulp for paper, and that often broken land which can not be profitably tilled could be planted with these rapid growing trees with great profit. Many young trees of ash, maple, hickory, &c., could be taken up by farmers and planted for a couple of years in nursery rows where they could be cultivated, and then transplanted to broken ground and hill-sides, with great certainty of living.

Mr. Beall mentioned an instance of a farmer who desiring to have a belt of trees for the shelter of his orchard, fallowed a strip of the desired width and then covered it with leaves and surface soil from his wood lot, and in a few years it was densely covered with a growth of young trees.

At the close of the discussion the meeting expressed its opinion in the following resolution :

RESOLVED, that the members of this Association are deeply impressed with the importance of encouraging the growth of forest trees in this Province, believing that they exercise a very decided influence on temperature, and furnish valuable shelter for our field crops and fruit trees. We also regard this subject as an important one from an economical standpoint, and believe that general forest planting in those portions of the country which have been almost denuded of woods would soon add very much to the value of land, and become before long a constant and increasing source of revenue. In this way also much land now of little or no value on account of its rough, hilly or stony character could be utilized with great advantage to the owner.

Some conversation was also had upon the encouragement of tree planting, the tenor of which was to the effect that it could be best

done by placing before the public the necessary information with regard to the value and feasibility of such planting, and the profit that would result to the planter.

How to popularize the study of forestry among the sons and daughters of farmers was also considered, and the meeting was of the opinion that the introduction of a class-book on this subject into our common schools would do more than anything else to impart knowledge, and so awaken an interest on the subject; and upon motion of Mr. Beall the meeting requested the President and Directors to confer with the Honorable the Commissioner of Education upon the introduction of such a class-book.

THE FUTURE OF SOUTHERN ONTARIO.

BY RICHARD STEPHENS, PORT DOVE.

There are two important considerations to be thought of in making choice of a home for life, but are too often overlooked by emigrants and settlers; these are the geography and geology of the country they adopt as their future home. People make a trip to Muskoka, Manitoba, or Dakota, and stay a week or two, generally in the pleasantest time of the year. The country visited looks fresh, green and smiling. There is the charm of novelty about it. They take a spade and turn up the soil, say in Manitoba, and find it is of the richest description. They are assured by old settlers that it is fifteen feet deep, and there is no doubt of it. It is inexhaustible, and the waving fields of grain, promising a yield of forty or fifty bushels to the acre, testify in its favor. They do not see the snows of winter burying this fair scene two or three feet in depth, with the thermometer making a temperature of 50° or 60° below zero, and the shrivelling blizzard tearing across the plains, almost taking away the human breath, and fraught with danger to all delicate organizations, whether of animal or vegetable life. They do not see the resistless tornadoes sweeping past, and leaving nought but desolation in their track; nor the plague of grasshoppers, consuming every green thing; nor the teams of oxen and horses during the spring and fall floundering through the mud almost as deep as the virgin soil. These, and many other serious obstacles to a pleasant life—and life can be lived but once—do not strike forcibly

the casual visitor. To young, strong, healthy men without much means, who can endure hardships and are not afraid of hard work, these western countries offer a homestead and independence in a few years. But let no one who has means, or a comfortable home in southern Ontario, be tempted by the west, either of Canada or the United States.

There is a great future for southern Ontario. We mean the strip of country bordering the north shore of Lake Erie. Owing to the geographical position of the lake, the prevailing cold west, north-west and northerly winds come from inland, where their force is broken by woods, hills and irregularities of the country, so that it is never very cold in winter; not so cold as the south side of the lake, where the full force of northerly and westerly gales sweep with all the violence accumulated by an unobstructed passage over the open waters.

The County of Norfolk is especially favored in this way, being additionally sheltered from the west by the tongue of land stretching out into the lake known as Long Point. The whole of this strip on the north shore of Lake Erie is situated geographically on a limestone formation, the soil being rich in lime, which is one of the essential constituents of most fruits. It is a fact often overlooked by horticulturists, that conditions of climate being equal, fruit growing will be successful on a limestone soil and a total failure only a few miles distant on a different geological formation. Striking examples of this peculiarity are shown at Montreal, in the valley of the St. Johns, N. B., and around Anapolis and Digby, N. S., where choice apples are produced. In every instance it will be found that the soil where the apple tree succeeds best is rich in lime. Take the valley of the St. Johns. Apples are grown here which for flavor and beauty of coloring are unsurpassed, and the trees are enabled to resist the rigors of the climate, while a few miles on either side fruit growing absolutely fails. Only a few miles to the south, and no apples can be produced among the granite hills of Maine. It is useless to look for them on the carboniferous fields which border the Gulf of St. Lawrence, only a few miles to the north. The same is true of Montreal, and of the narrow fruit belt of Nova Scotia.

On the north shore of Lake Erie we find all the conditions of soil and climate favorable, not only for apples but for the choicest varieties of fruit. Peaches flourish luxuriantly so far as they have been tried,

bearing every year. Rev. Mr. Quinn has the honor of being the successful pioneer peach grower in the County of Norfolk. From about a thousand trees only four years planted he is said to have netted over a thousand dollars last year above all expenses. The prospects for the coming season promise a much richer harvest. Many are encouraged by his success to plant extensively. Mr. A. Ball set out eight hundred trees this spring, and many others are planting from fifty to five hundred. The railroads from Port Dover, intersecting all the leading lines of the country, facilitate the shipping of peaches, and make their culture a possibility in this section. Much greater possibilities, however, await the horticulturist in the production of grapes and the manufacture of wine. This is almost the northern limit of the great grape producing belt of America, and wherever there is a clay loam within a few miles of the lake, grapes can be produced of the finest flavor, with enough of saccharine matter and abundantly rich in the wholesome acids to make a wine for general consumption to supersede other liquors. It ought to be produced in such abundance as to drive beer, whiskey and other vile compounds into the background. Pure, wholesome native wine is the best promoter of temperance, the cure for dyspepsia and delirium tremens, and the restorative for patients suffering from the effects of chronic malaria.

In the same latitude as Italy, Portugal or the south of France, we have a climate tempered in summer by the cool breeze off the lake, and mellowed in winter by the vicinity of so large a body of fresh water. Our soil is capable of producing all kinds of grain crops, and if we have not so deep an alluvial soil as is sometimes found in the west, that is to our advantage, for we are able to find a bottom for our roads. If we can not boast of fifteen feet of black muck we have fifteen inches of good earth, and that is sufficient for all practical purposes. It would cost more to bring anything below that to the surface than to buy a new farm, so we need not covet these deep lands of the west.

This is the country in which to enjoy life. Farmers can live if they choose as well as the best bloods of Europe, dress as well and drive as fine horses; and their wives and daughters are as attractive and accomplished as any class in the world. It is doubtful if any ordinary society in any country in the world can show a better average of ladies than Ontario. Many of them dress in the latest

styles, wear the best materials, and what is a good deal more to the purpose, they know how to wear them gracefully and becomingly. If the independent land owners of southern Ontario, only knew it, there is very little that they need desire, and certainly nothing in the west.

MIDSUMMER AND AUTUMN FLOWERING SHRUBS AND PLANTS FOR THE DECORATION OF GARDENS.

BY WILLIAM C. BARRY.

(Continued from July No., page 112.)

For midsummer decoration the

HOLLYHOCK

proves very effective. As it attains a height of from six to eight feet it is useful to plant at the back of borders of shrubbery, and it may also be arranged in beds or planted alone. In July no flower is more attractive, and their long spikes of large rosette-shaped blooms of beautiful and brilliant shades of color present a charming appearance. No garden which lays claim to completeness can afford to dispense with so great an attraction. Hollyhocks are raised easily from seed planted in the open ground in July, so that the young plants may become strong enough by autumn to survive the winter by being slightly protected. They can be lifted early in the spring, transplanted, and they will flower in July and August. Propagation by division is performed in autumn as soon as possible after the plants have flowered. The roots should be dug up and cut into as many pieces as there are shoots, and these pieces can be replanted. We raise our plants entirely from seed, and as the varieties are constantly changing I will not endeavor to give any list.

Another valuable class of summer-flowering plants are the

DELPHINIUMS, OR LARKSPURS,

which exhibit a wonderful variety of beautiful colors and shades from pale blue to black. In the mixed border they are superb. Tall and conspicuous when in flower, they never fail to arrest the attention of even the most unobserving. Their culture is easy, and, like other perennials, they can be increased by division in the fall.

THE DAHLIA

is still recognized as a most valuable fall flowering plant, but it is not nearly so popular now as it was some years ago. The culture is so easy and so well understood that I do not deem it necessary to refer to it in this article. Neither will I occupy your time in naming and describing the many select kinds now grown—the names of which are to be found in the trade catalogues.

THE TRITOMA UVARIA,

sometimes called the *Red Hot Poker* or *Flame Flower*, blooms in September. Its flower stems are from three to five feet high, and are terminated with spikes a foot long, of pendant red and orange scarlet tubular roses, resembling the plumes of a soldier's cap. In the mixed border these plants are very showy and effective, and they are also very useful in the centre of beds of autumn flowering plants.

A late flowering

SPIRÆA, CALLED CALLOSA ALBA,

must not be overlooked in a collection of midsummer flowering shrubs. The plant is of dwarf, compact habit, almost round; always forms a pretty specimen, and produces white flowers. It commences to blossom in July, when all the other Spiræas are out of flower, and continues in bloom nearly all summer. For the edges of borders, or employed as a single specimen, I know of no shrub that is more elegant and useful in a garden.

HARDY ROSES.

A few of the finest autumn flowering varieties may be named, as follows: Alfred Colomb, Marguerite de St. Amande, La France, Countess of Serenye, Paul Neyron.

FRUITS IN WYOMING COUNTY, STATE OF NEW YORK.

(Continued from July No., page 109.)

APPLE CULTURE.

Whatever may be said of our fruits, the apple is appreciated in Wyoming County. All agree that no branch of horticulture or agriculture better rewards the care bestowed upon it. The area of our apple orchards is every year increasing, and what is better, we are all learning that profits are contingent upon judicious management. Touching cultivation, the testimony already in, warrants us in summing up the case: Plowing of orchards is not necessary to their highest vigor, long life, or abundant fruitfulness. Few have failed to notice the vigor and productiveness of fruit trees, which, standing in yards, or near fences and buildings, escape the plow and get plenty of nourishment. The chairman of this committee, in an address published in the transactions of the New York State Agricultural Society of 1867, page 141, made this statement: "When I hear of trees standing near a woodpile, in the corner of a fence, near a barn, a hog-pen, or the kitchen door, I am prepared for a big yield. The great majority of our apple trees are either starved outright or go very hungry. There are few instances of very large yields, except the tree by an adroit strategic movement backed itself up against a building, a morass, a barn-yard, or something that could shield one side at least from its remorseless

plunderer, man, and furnish some nourishment." This was said after carefully collecting numerous orchard statistics, and observations made since fully confirm it.

Not three days ago the writer's attention was called to a tree sixty-five years old, fresh and vigorous, which bore last fall fourteen barrels of apples. It stood close to the kitchen door, where slops were thrown and where neither plough nor grass were allowed to trouble it. Mr. Heath took a thousand barrels of very fine apples this year from 350 trees (specimens may be seen on your tables); the frost destroyed his apples on the flats; five Spys and fifteen Baldwins gave 180 barrels. The ground has not been plowed since the year they were set.

Properly stated, the question in controversy is this: Which will kill the quickest, a sharp plow or a tough sod? We confess we can't tell. We have thought the thing over a great deal, and we can't decide. Sometimes one, sometimes the other is to be preferred, but they are both nuisances to be abated. The sod should be broken by mulch, manure, the rooting of hogs, the stamping of sheep, or the spade fork—the plow is always and invariably a choice of evils. Theoretically, nothing on earth is more absurd than to plant an orchard and then go to work systematically to exterminate every root that ventures within eight or ten inches of the surface. That is exactly what we do, as all who are familiar with the process will admit, when we keep orchards under the plow. The assumption is, that rich, warm, genial soil must be devoted to beans barley and buckwheat, and the tree, from which the chief profits are expected, must go down, down, and struggle for a living among the cold, barren clods of the subsoil. The doctrine is absurd on the face of it, and experience confirms what reason suggests. If we plow when the trees are young, we should plow lighter and further off as the roots extend, and always remember the roots know where to go as well as any member of the New York Horticultural Society can tell them.

TRIMMING APPLE ORCHARDS.

Perhaps nothing in the whole range of our discussions more requires investigation than the trimming of trees. We need to know how the tree is affected by trimming at different seasons of the year, and at the various stages of its growth. Trimming in winter promotes growth and in summer checks it—the one makes wood, the other fruit. Nice discrimination is required to know what is needed, and how to secure it. A tree starts more shoots than it can develop and support—left to itself some branches die, and all stagnate. A good deal of fruit may set, but much will fall; much will be imperfect, and all will be small and flavorless. Properly trimmed trees will seldom set more fruit than they can mature, and so the labor of thinning will be lightened.

We have time to call attention to only two or three points. We think the common method of cutting out the centre of the young tree a very pernicious one. Several limbs are started, say five feet from the ground, but if the central leading one is removed the others shoot upwards, all striving for the mastery, and are not knit and joined as lateral branches.

should be. In a tree, however, as in society, there ought to be a leader. We recognize and respect the leader in the pear tree, and we ought to in the apple tree. We make three serious objections to the prevailing method of trimming. Cutting out the central leaders we injure the symmetry of the tree; we weaken it and make it liable to split; and the fruit is not so well exposed to air and light. If the centre is preserved, the side branches are well joined to the trunk like the thumb to your hand, and will bear a strain; if the centre is removed the branches grow like the fingers of your hand, and do not bear a strain so well. The inverted umbrella shape looks open on the start, but as the limbs develop the south side branches take the sun, shading the north side; the light and air are not as well admitted as when the branches shoot out literally from a central column.

DISTANCE IN THE ROWS.

It is a grave question how far apart trees should be planted. There is some reason to believe that apple trees twenty feet apart, properly thinned and shortened in, will yield more fruit to the acre than if planted thirty five feet apart. Tops must be open and trees must not crowd each other. Planted near together, they must be rigidly shortened in—dwarfed in a measure. Each year's growth must be cut back to two or three buds, and the top held to the space allotted to it, so there shall be no crowding. Now, will not this cutting back produce fruitfulness, as with the grape vine? Will not the wood be firmer, the tree harder, and the fruiting better for this circumvention? One thing is certain, the trees being numerous draw more evenly from the soil. Being smaller in size, they do not draw so heavily from their immediate locality. The draft on the soil is more evenly distributed. Two or three significant facts confirm this theory. One of the most noted orchards in the State, the Smead orchard, of Pavillion, gave \$1,370 worth of fruit in 1862, \$4,100 in 1864, and \$4,500 worth of fruit in 1865, and consists of six acres, planted less than twenty feet apart. The only other orchard we can hear of that makes as good a showing is an orchard of trees belonging to Mr. Connable, of Warsaw, which in several different years has yielded \$1,000 worth of fruit; it is also planted less than twenty feet apart. A theory with such a backing may well be looked into.

REPLY TO INQUIRY CONCERNING TAP-ROOTS, PAGE 88.

Mr. J. A. Mackay, Winona, writes, in answer to Mr. J. W. Cumming:—"Forty-five years ago a road was cut through the old Jesuit orchard at Quebec. The trees were said to be over a hundred years old, and though neglected were said to bear well. Under each tree was a flag of magnesian limestone, which must have been brought from a distance."

QUESTION DRAWER.

R. J. Graham, Belleville, Ont., writes :—

1. I have an orchard of about six hundred trees in all, set out from ten to twelve years ago. I am troubled with blight on the ends of the apple tree limbs—worst on Fall Pippins. The trees are very healthy, and have grown extremely rapid. I had them grafted with *Æsopus Spitzenburg*, and most of the grafts blighted when they had made a growth of about six inches. Can you tell the cause or give a remedy for the above?

This blight in the twigs of the apple trees is well known in this part of the country, but the cause and cure are yet unknown.

2. PEARS. I set out Flemish Beauty, Bartlett, Sheldon, White Doyenne, and Osband's Summer. All died with blight but the Flemish Beauty, one Sheldon, and one Osband's Summer. The Flemish Beauty have done extremely well. I have about thirty fine bearing trees. Last year the leaves became covered with brown spots, and the fruit spotted black. I see this year they are doing the same. Can you tell me the cause or give a remedy?

This rust or spotting of the leaves, and spotting and cracking of the fruit of the Flemish Beauty occasionally occurs in this section, but has by no means been a constant trouble. The cause seems to be a peculiar fungus growth upon the leaves and fruit. No remedy has been promulgated, but dilute carbolic acid is sure death to fungoid growths, and careful experiments with it would be valuable.

3. CHERRIES. I set out twenty trees, Black Eagle, Oxheart, Royal Duke and Bedford's Prolific; I also have some common black and red. Of the trees I bought, the most became rotten hearted and died, but what lived are large trees, and have never borne any fruit yet. This year the leaves are covered with small brown insects, which are eating up the leaves, and on common fruit are spotting the cherries. Soil clay loam. Can you account for the above?

The insects are probably the Black Aphis. Syringing the tree freely with water in which tobacco stems have been steeped will soon rid the tree of them.

I have about fifty plum trees, of nearly all varieties, which have done remarkably well, being loaded every year since they commenced to bear, four years ago. I have not been bothered with *Curculio* or black-knot. I have some borers in my apple trees. The raspberry plant arrived in good condition, is planted in rich loam, and has made a growth of about six inches.

4. Which are the best varieties of strawberries for family use?

This is largely a matter of taste. Some dislike acid strawberries, and others dislike some other peculiar flavor. The writer finds no

better strawberry to his taste than a perfectly ripened Wilson, preferring it by far to Jucunda or Triumph de Gand. Many prefer either of the latter to the Wilson. Crystal City is a very early sort; Prouty ripens after; Cumberland Triumph large and very productive, and Glendale, late. These should satisfy the wants of any family in the strawberry season, if one only plants enough of them.

An esteemed correspondent asks:—

What about the Cuthbert Raspberry; is it the same as the Pride of the Market?

A few days ago we made a visit to our friend Morris, of Fonthill, County of Welland, and spent the day with him rambling over his nurseries, and among other interesting objects he showed us some rows of both of these varieties growing side by side. The only difference that we could see in them was that the Cuthbert row had been much more severely winter-killed than the Pride of the Market. In foliage, habit of growth, color and size and flavor of fruit, we could not see any difference. The Cuthbert row having suffered so much more from winter-killing the canes was necessarily less productive. We had about concluded that the winter-killing of the Cuthbert row was owing to some accidental cause too obscure to be certainly designated, but on subsequently examining a small block of Cuthberts at Lockport, N. Y., we noticed that they had been also considerably killed back by the winter. If there be any difference between the Cuthbert and Pride of the market, this is the only one, and this requires the test of future trial to be accepted. It appears to be a very prolific bearer, and the fruit is of good size, good color and flavor, and sufficiently firm to carry well to market.

THE GREGG RASPBERRY.

Mr. Morris also showed us a few rows of this new black-cap in bearing. Under the same treatment it is not only larger than the Mammoth Cluster, but fully as productive, and ripening just after the crop of Mammoth Cluster is harvested. Beginning with Davison's Thörnless, which is one of the earliest, the season of black-caps is very much prolonged by adding a few rows of the Gregg, to come in after the Mammoth Clusters are gone.

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[No. 9.]

FRUIT.

BY A. HOOD, BARRIE, ONT.

Although we cannot in all respects equal more southern climes in the production of this very agreeable article, still in my ignorance of the home fruits of other countries, I have prided myself on what I have believed to be a fact, that however favored these countries may be in commanding greater varieties, they cannot produce anything that is superior, if equal, to a plate of good strawberries duly served up with cream and sugar. This, however, may be a matter of taste, and a good deal depends on the condition of the fruit and the quality of the accessories. I dare say all of my readers have experienced the often disappointing result arising from the impossibility of getting two berries alike, or more than one out of five or six that are really satisfactory, when picking this fruit fresh from the vines and eating it as picked. This depends on the stage of ripeness at which they are gathered, those over-ripe lacking flavor, and those under-ripe being too acid. All berries, therefore, exposed for sale must to a certain extent be defective, because plucked before attaining the state of greatest perfection. To meet this difficulty a certain combination of different flavors would appear desirable.

I remember once reading a suggestion for mingling the different perfumes that could be extracted from flowers in such a way that a whole audience might enjoy the different changes and combinations that could be produced. The plan was to have all the perfumes in separate vessels, so contrived that by the touching of a spring or springs any one or more of them would discharge a portion of their contents in the shape of a fine spray, which a current of air would carry to the olfactory nerves of the audience. This instrument was to be operated similarly to playing an organ, so that a performer had only to touch the keys which were connected with the springs to send

among the audience at pleasure any perfume or any combination of perfumes which his or her taste might suggest, to be succeeded by other combinations in like manner, as the different chords in music follow each other to produce harmony and melody.

I do not at the present time intend to suggest anything quite so complicated for the gratification of our organs of taste; indeed, it would be rather a comical spectacle to see a whole audience with their mouths open, like a nest of young birds, waiting to be filled with some combined extract of the different kinds of berries, but I will tell my readers how they can for themselves pick and eat to their satisfaction, or mix up a dish of strawberries that shall leave nothing to be desired.

In the first place allow five or six berries on each plant to ripen before any are picked, and if you wish to eat them from hand to mouth, take all the ripe berries from one plant and eat them together, and the acidity of the underripe will be corrected and improved by the sweetness of the older berries, and you will be sure of a luscious mouthful. Gather in the same way *ad libitum* for a dish, and you will have one whose delicious qualities it will be hard to beat. It is not expected that you will eat six berries at one mouthful should they attain the size of the Sharpless, as represented in the July number of the HORTICULTURIST. When I made this discovery I was cutting down the weeds from between the rows of a new plantation with a wheel-hoe. These plants had not been picked over for market, and therefore the berries were in all stages of ripeness; and when I learned what a rich treat each plant was capable of affording me, I am afraid the wheel-hoe made more stoppages than was necessary. I found it easy to persuade myself, however, that pushing that implement through those overgrown weeds was too hard work to be continuous, and that nature, as represented in the person of the writer, required rest; and with those delicious clusters waiting to be plucked,

I could not bear to pass them by with cold, unfeeling stare;

I could not bear to leave them, for I knew how sweet they were.

But what about the healthfulness of fruit? Here I must say I have hitherto been somewhat undecided, from the fact that I have found some kinds, apples particularly, to disagree with me. I therefore could not enter into a wholesale eulogium of its virtues as others have done, but have contented myself with supposing that my case is an exception to the general rule, and that to the great majority it is

decidedly beneficial. This view has been lately strengthened in my mind, because I have made a little discovery that has swept away even that exception, and made me a recipient of the general benefit. The trouble was that there was too much acidity in my constitution, and as all fruits are acid, it rather aggravated the difficulty, but now I have discovered a counteracting antidote, and am enabled to benefit by the other good qualities it contains, which are as varied as they are valuable. Of course there is a wide difference in the qualities of different fruits, and some of them may be found not to agree with particular constitutions. If the medicinal effects of each kind could be ascertained and clearly set down it would be a useful guide to consumers; but, as a rule, I am inclined to think that the greater the variety indulged in the greater will be the benefit. I have myself followed a strictly fruit and vegetable diet for one or two years at a time, and as a consequence a diarrhœa that had almost become chronic, and piles that were very troublesome entirely disappeared. I cannot say whether it was eating fruit or abstaining from meat that benefited me. My wife has been twice relieved entirely of a bad attack of piles, without knowing at the time to what she could attribute such relief, but now recollects that both cases occurred when we were using strawberries freely every day. When my daughter was about three years of age she was seriously troubled with bowel complaint, and thinking it would do her good she was allowed to go to the strawberry patch and help herself, which she did very freely, and her complaint soon left her. I am satisfied there is virtue in strawberries, whatever there may be in other fruits.

I have had less experience with grapes, but I am inclined to think they possess medicinal properties of a valuable kind. They contain tartaric acid and cream of tartar, both of which are good medicines, and I should expect a liberal use of this fruit to be fully as beneficial as that of strawberries. Constitutions differ materially; some are benefited by acids and some by alkalies. I have chanced upon certain things during my lifetime by which I have been benefited more than by doctors' advice, and have no doubt others have done the same. Take an example from my own experience. I once suffered severely for two months from a complaint affecting the eyes, which was so painful as almost to incapacitate me from business. One of my eyes could not bear the light, and the other was very painful. Eye-water,

sugar of lead and the usual remedies were tried with little benefit, until I happened to take some cream of tartar at the same time that I was taking quinine for the dumb ague, and to my great surprise and relief in two or three days my eyes were well again. It was, I think, the combination of the two medicines that accomplished the happy result; and since that time if I ever find the eye complaint returning a dose or two of cream of tartar is sufficient to set all right again. Now, as all grapes contain cream of tartar, may they not be exceedingly beneficial to constitutions requiring that particular element; and if so, it would appear that it might be better and a great deal cheaper than paying doctors' bills, to spend our contributions to the income of those professions in purchasing ample supplies of health-promoting fruits.

A NEW SEEDLING PLUM.

Through the kindness of Judge Macpherson, of Owen Sound, we have received a sample of a seedling plum which is nearly as large as a Lombard and resembling it in color, but which ripens early. The Judge says that the fruit ripens much earlier than any of the plums in this part of the country known to him. He has now about thirty bearing trees of this variety, all raised from sprouts from the parent tree, which grew from seed in his garden some twenty years ago. It is a thrifty growing variety and a good bearer, and he is of the opinion that it would prove a valuable fruit if disseminated.

Judging from the sample received, which arrived in excellent condition, we would expect it to carry well, the flesh being firm and adhering closely to the stone.

A SINGULAR FREAK OF NATURE.

We received a sample of fruit from Mr. E. Morris, of the Fonthill Nurseries, which grew on an Early Harvest apple tree. It has the form and general appearance of a pear, being most symmetrically pyriform, but having the odor, texture and flavor of an apple. It is gratifying to learn that strange things happen in this way in other places than in the neighborhood of Mr. Charles Arnold, who has hitherto seemed to have enjoyed a monopoly of these wonderful occurrences.

A. M. PURDY'S OPINION OF SOME OF THE NEWER STRAWBERRIES.

In the July number of the *Fruit Recorder* Mr. Purdy gives a list of several varieties of strawberries, to which he appends the results of his experience. We shall not give the whole of his list, but select some of the most prominent, and those most likely to interest cultivators in Canada.

CRESCENT SEEDLING ripens as early as any ; average size equal to the Wilson, and like it in shape of berry ; color lighter scarlet, and flavor better, *as picked for market*, than the Wilson. It is very productive, holds out to the last, and should take the place of Metcalf, Downer, Nunan, Nicanor, Philadelphia, French, Duchess, Cinderella and Early Adelia.

CAPT. JACK is similar to Wilson, but a richer berry ; very productive, but needs rich soil.

PROUTY, one of Mr. Purdy's favorites when grown on rich soil. The berry is long, varying from oblong to conical ; ripens with the Capt. Jack ; is immensely productive, of good size, and very uniform, and one of the best selling sorts to the last.

TRIUMPH DE GAND is too shy a bearer on his grounds to pay, so he discards it from his list of profitable market sorts.

WINDSOR CHIEF, he says, is the most uniform large berry on his grounds. He places it at the head of the list on his grounds, as the best and most profitable market and family berry. The fruit is almost round, averaging from an inch to an inch and a quarter in diameter, and holds out well. The flavor is good, the color orange scarlet, and it carries well to market. Having this he thinks one has no need of Green Prolific, Chas. Downing, Forest Rose, Monarch of the West, Jucunda, Great American, Star of the West or Black Defiance.

KENTUCKY is too soft, and has too much of a greenish appearance to make it a safe market berry, especially for distant markets.

COL. CHENEY is one of his standard sorts for home market, being wonderfully productive, but requiring to be fertilized with pollen from other sorts to run large and fine to the last.

GLENDALE. He says that for uniform size, productiveness, fine color, hardiness, and extreme lateness it has not its equal on his grounds. It will bear carriage to distant markets the best of any strawberry he has.

SHARPLESS, he says, ripens late ; is the largest berry on his grounds, of a sweet, delicious, aromatic flavor, dark scarlet, very solid and juicy, splendid for home use and near markets, and very productive.

For profitable market strawberries he gives the preference to Crescent Seedling, Windsor Chief, Wilson, Col. Cheney, Capt. Jack, Prouty, Sharpless and Glendale, and thinks that any one having these eight sorts may discard all the rest, unless he means to except the

Centennial, of which he seems to be suddenly enamored, notwithstanding the almost black color of the fruit, which is not usually a desirable color in a market strawberry.

THE HUCKLEBERRY.

Horticultural papers are copying an article from the *Weekly Tribune* written by a correspondent living in Maine, who states that he has cultivated the Highbush Huckleberry (*Vaccinium Corymbosum*) for forty years with unvarying success. We believe they are doing a good work in thus calling attention to this fruit. The present sources of supply will give out after a time, and besides, why should we buy fruit that has been bruized almost to a jam and become almost stale when we can have it fresh every day from our own gardens. The "Canadian Fruit, Flower and Kitchen Gardener" sometime ago called attention to this fruit, and urged upon horticulturists the raising of new varieties from seed and establishing them in their gardens, but until the appearance of this letter we were not aware that anyone had done anything in this direction. This gentleman says that he has found it the most profitable and reliable of any berry with which he has experimented. Under culture the bush bears with great profusion, while it is long lived, and too hardy to be injured by the cold of the severest Maine winter. It does not require high culture nor very rich soil, but needs to be planted where it can get the full blaze of the sun. He has grown his plants by transplanting them from wherever he found them growing wild, and has not made any experiments with sowing the seed, yet he says that the seeds produce distinct varieties, varying in size and flavor, and also varying in color from black to almost white.

Will not some of our readers take this matter in hand and experiment with plants in the garden from the wilds, and also in raising new sorts from seed. It is a new and quite untrodden field, and on that account one of much interest. The berries can be crushed, mixed with fine sand, sown on a well pulverized bed, and covered with fine mold, where they will grow, and the plants remain the first year. The next season the young plants should be set out in the open ground where they are to grow and fruit. Doubtless the result would be a decided improvement in the size and quality of this popular fruit.

. RASPBERRIES—MOST PROFITABLE SORTS.

As many of our readers are already aware that Mr. A. M. Purdy, of Palmyra, N. Y., is extensively engaged in the growing of raspberries for market and for drying—having put up a large evaporator for the purpose of drying raspberries and other fruit—they will doubtless feel an interest in knowing what has been his experience during the past season. We therefore condense from the August number of the *Fruit Recorder* the remarks which he there makes upon this subject.

He states that many planters make the mistake of planting too many of *one* sort, thereby having a larger quantity of berries to handle at once, instead of planting several sorts having different periods of ripening, and so keeping up a steady business continuously during the season. For this reason he plants Davidson's Thornless, Tyler, Doolittle, Seneca, Mammoth Cluster and Gregg. In a plantation of thirty acres he would set ten acres with the Davidson's Thornless, Tyler and Doolittle, and the remaining twenty acres with Seneca, Mammoth Cluster and Gregg. He finds the Tyler about as early as Davidson's Thornless and larger and more productive. These two are the earliest black raspberries, and are all gone by the time the Mammoth Clusters ripen, which in turn are nearly finished by the time the Gregg berries come in.

When black raspberries sell readily at seven to eight cents per quart he prefers to sell them, but when they fall below six to seven he prefers to dry them. During the present season we learn that some of the improved evaporators for drying fruit have been erected in the Niagara District, and that growers of fruit in that part of the Province may now be able to count upon a certain market for their fruit. Heretofore when the market for fresh berries was glutted there was no sale for the surplus, and the experiment of shipping to distant markets usually resulted, after paying express charges and commissions, in nothing for the grower.

Of the red raspberries, Mr. Purdy gives the preference for an early sort to the Highland Hardy, which ripens up promptly and sells readily at good prices. The Thwack and Brandywine he finds to be excellent for shipping, the fruit of good size, and the plants prolific, giving the preference to the Thwack as the best red raspberry for market, on account of the bright color of the fruit and the firmness of

their texture. He pronounces the Turner to be as hardy as a burr-oak and wonderfully productive, while the fruit, though of good size, is too soft for long shipments. The Cuthbert he thinks to be too dark in color, but otherwise good. His largest reds are the Delaware and Clarke, selling for the highest prices in home market. He says, however, that he would not exchange the Philadelphia raspberry for most of the new sorts, its yield being immense, far beyond that of any red sort, and selling quick for ten cents per quart for making into raspberry jam.

On the subject of cultivation, he recommends liberal manuring and good cultivation for the black raspberries, and planting them in continuous rows, but prefers to grow the red raspberries in hills, so that the cultivator can be run both ways, and the suckers kept down by the knife attachment which runs just below the surface, and not to manure them as abundantly as the black varieties.

THE ENGLISH CARROT.

MR. EDITOR:—Can you or some of your readers tell me if the English Carrot ever becomes a weed in any part of the Dominion. I ask because we must add its name to the long list of imported plants which are running wild and becoming a nuisance in this neighborhood. Two years ago it was completely unknown, but I have had four or five enquiries during the past few weeks for the name of this new pest. This alone will show how great a stranger it is. I am told that it was introduced from Toledo with timothy seed. Be this as it may, there is one district south-east of this town where not a head could be seen two years ago, but where the carrot now is as common as the yarrow, also imported. I am the more confident on this point because it is on the road that I most frequently travelled on my way to the stone quarries to obtain geological specimens. This year not only is it in the fields but in the adjacent fence corners and roadside, probably blown there during the sowing of the timothy seed. As it is a biennial plant these seeds must have fallen there in 1878. One advantage to the farmer is that it seeds late, so that it will be cut and taken off with the crop; but against this must be set the other fact, that when cut down it will spring up and flower again later in the season, if fertile. I say "if fertile," because the Canada Thistle, which was introduced here in packing-straw about ten years ago, is sterile, and never produces any seed, consequently it is fettered by being confined to the comparatively slow process of multiplication by root, and as a result the patch is not now, after ten years tenancy, more than thirty or forty feet in extent, bounded on the east and south by two roadways which it has been totally unable to pass. Would that some other imported plants, the Purslane, Burdock and Mayweed were equally imperfect.

E. W. CLAYPOLE, Yellow Springs, Ohio.

Will our readers have the kindness to reply to Mr. Claypole's inquiry. We have never seen any land infested with this carrot, nor have we before heard any complaint.

EXPERIMENTS IN THE GROWING OF TIMBER TREES.

It seems to be the fortune of some men to live in advance of their times. They look out into the future and see events approaching for which they would themselves prepare, and strive to impress upon others the importance of making provision beforehand to meet the coming need. But their words seem to their contemporaries as idle tales, and they fall unheeded as an autumn leaf. Among these men may be ranked Prof. J. Beal, of the Michigan Agricultural College, who has planted on the college grounds a small arboretum of something over two acres, for the purpose of experimenting upon the growth of timber trees, that he may ascertain the time required by each variety to attain such size as will make it valuable for economic uses. Doubtless this will seem to many a useless expenditure of his time and of the people's money. Michigan still abounds in forests, and the question of future supply is scarcely even thought of, even by those most interested in such supply. But Prof. Beal with a wise forethought has begun a series of experiments, the value of which will be appreciated in coming years, and whatever men may now say, future generations will honor his wisdom, and gratefully admit that these investigations were not begun at all too soon.

The arboretum of the Michigan Agricultural College contains about two hundred and seventy-five species of trees and shrubs, all of which are properly labeled and recorded in a book of the plat. The soil is a sandy loam, naturally well drained. A portion of the surface soil had been taken off in grading an old road which at one time ran across the arboretum, and the trees growing on this part exhibit a marked inferiority, showing that even forest trees are sensitive to bad treatment. Prof. Beal gives as an illustration of this, that some Butternuts which had grown for three years on this denuded strip averaged only twenty, two inches in height and an inch and five-eighths in circumference—while those on each side of them, growing in good soil, averaged about five and a half feet in height and four inches in circumference.

He states that the seeds were planted as soon as ripe, in rows running four feet apart, in most cases where the trees are wanted to remain, and kept well cultivated until autumn. In this statement the height is given, also the circumference at six inches from the ground, and the weight of good specimens cut off at the surface of the ground. By weighing them he ascertains to an approximate degree the bulk of the wood. The following varieties are given, with the results in each case :

BURR OAK, (*Quercus macrocarpa*.) These when examined had been growing for three years. The seeds grew only a few rods from where they were planted. These trees had attained to thirty-six inches in height and a girth of one inch and three quarters, and weighed three and a half ounces, having never been transplanted.

WHITE ASH, (*Fraxinus Americana*.) These are growing by the side of the Oaks, and also were never transplanted. The seeds came up evenly and quickly and grew well. At the end of the first two years they were straight, clean and without a branch. When three years old their height was from ninety to ninety-six inches, girth from three to four and a half inches, and they weighed from sixteen to twenty-two ounces. By the side of these are two rows which were transplanted at the end of the first year, and these seem to be about a year behind those not moved. At three years old these attained the height of seventy-two inches, a girth of two inches and a quarter, and weighed eight ounces.

LINDEN OR BASSWOOD, (*Tilia Americana*.) These are fully as large as the Ashes, and were not transplanted. Their height is ninety-six inches, girth from three and three-quarters to four and five-eighths inches. The weight is not given.

SUGAR MAPLE, (*Acer saccharinum*.) Next to the Basswood are three rows of Maples also three years old. These are uneven in size, many being quite small. One tree was much larger than the rest, it was seventy-two inches in height, girth two inches and five-eighths. The average of the next size was thirty inches in height, with a girth of one inch and one-eighth, and weighed eight ounces, while many were only eighteen inches high, but having the same girth of one inch and one-eighth.

BUTTERNUT, (*Juglans cinerea*.) These are next to the Sugar Maples, and are three years old. The largest of these is seventy-eight inches

in height and five inches in circumference, the others growing in good soil are sixty-six inches in height, four inches in circumference, and weigh forty-four ounces; while those growing in the old road, where the surface soil had been graded off, weighed only two ounces.

BLACK WALNUT, (*Juglans nigra*.) These were measured at two years old; those not transplanted attained from twenty-eight to forty-three inches in height, with a girth of from two and one-eighth to three and one-eighth inches, and weighed eleven ounces, while those that had been transplanted weighed only two ounces.

CHESTNUT, (*Castanea vesca*.) These are uneven. Some seedlings grew a foot or more in height and blasted and died in August or September, though the most of them lived. Some were transplanted when one year old. Those not transplanted attained when three years old a height of forty-three inches, and a girth of two inches and a quarter to two and five-eighths.

OHIO SHAGBARK HICKORY, (*Carya sulcata*.) These are all small and spindling, and the best of them only about eight inches high.

ASH-LEAF MAPLE, (*Negundo aceroides*.) These were transplanted when three years old. We understand the Professor to say that this tree grows along the river bottoms in that neighborhood, and that those growing there are small, short and crooked, and the largest does not exceed one foot in diameter. This is very different from the variety which has been planted as an ornamental tree in this part of Ontario, which is a very rapid, upright, symmetrical grower. The seedlings transplanted by the Professor at three years of age were found two years after to measure about one hundred and two inches in height, and eight inches in circumference.

CATALPA. Of this the Professor says, "The seeds of these came from the Department of Agriculture at Washington. Since writing my report the trees have twice borne fruit, and prove to be the hardy species or variety. Since they came up and have made their present growth they have passed through two of the severest winters, when the mercury went 32° and 33° below zero. They were once killed back a little, but at present they seem healthy. They have made a rapid growth, although transplanted when they were three years old. I am much pleased with these trees, which have exceeded my expectation. Since making my report I have started more of them." Three years after being transplanted, that is when six years old, they

were from twelve to fifteen feet high, and from eight and a half to twelve inches in circumference.

RED ELM, (*Ulmus fulva*.) "I set a few small trees, which have grown three years since that time. We generally think this tree grows slowly, but these have done well. One of them the past year made a growth with one of its best branches of eight and a half feet."

SILVER MAPLES, (*Acer dasycarpum*.) "These beat all the above in their rate of growth." Transplanted when one year old, these trees when four years old were eighteen feet in height, and measured from eleven to eleven and a half inches in circumference.

The Professor adds: "I am growing young trees of the Beech, European Larch, White Pine, White Oak, Rock Elm, American Elm, and many other kinds of prominent trees. These are all yet quite young."

BRUNTON'S EARLY BLACKBERRY.

We see by the August number of the *Fruit Recorder* that Mr. Purdy has changed his opinion of this blackberry, and now speaks well of its size and quality. His earlier impressions were made by fruit borne upon young plants that had suffered considerably from the cold of the previous winter, and he then spoke of it as small and unpromising. Now that he has fruited it upon well established plants, he says the berries are from medium to large, very uniform in size, and most delicious. It ripens very early, this season by the month of July, about with the Mammoth Cluster Raspberry, and before the Dorchester Blackberry, which has heretofore been the earliest sort, has begun to turn red. The plants too are very prolific, being bent to the ground with their load of fruit; but they are no more hardy than the New Rochelle or Lawton Blackberry. He found the berries sold readily at fifteen cts. per quart when black raspberries are bringing only eight cts.

A SWEET CRAB APPLE.

We have received from the Fonthill Nurseries a specimen of a sweet variety of Siberian Crab, cultivated under the name of "Orange Crab." It is about the same size as the Hyslop Crab, of a rich yellow color, and quite sweet. It may be a valuable addition to the list of crab apples.

SOME BASE SLANDERS REFUTED.

(FROM AN EXCHANGE.)

The tomato is an excellent article of food, notwithstanding the assertion of many who claim that it is not healthy, produces cancers, etc., etc. Now, I believe it to be one of the healthiest of vegetables. Note its ruddy hue, its fine smooth skin, and its plump, well-rounded form; surely there is nothing to indicate disease, and there is every reason to believe that its general health is equal to, if not better, than that of any other vegetable that exists. Take, for instance, the beet; mark the fatality that attends their growth! Dead beets can be counted by thousands in every community and in every climate, who have been nurtured under the most favorable circumstances—as regards sanitary measures—for their healthful growth. Even the potato has its almost yearly epidemic which carries off countless numbers, causing bitter sorrow, and leaving scarcely a dry eye in the whole Murphy community. They have other troubles also; 'tis the early potato that catches the worm—or, rather, that is caught by it—and no vermifuge, however powerful, has yet been discovered that covers the ground sufficiently to protect it from the fell destroyer.

Cucumbers and onions are very far from being immaculate. The former are cut down—or, rather, cut up—in the heyday of their youth, as it were, and seldom live to a green—*i. e.*, a yellow old age. Even in their infancy they are continually getting in a pickle, and are no comfort to themselves nor anybody else. The onion is a confirmed invalid, and if it leaves its bed it is sure to get in a stew. It prides itself somewhat upon its rank in society, but it is in bad odor among its fellows. But I digress. It was not the intention to write up the entire vegetable kingdom, but merely to defend our friend, the tomato, from its traducers. Lettuce return, then, to our subject.

Find a greater delicacy to preserve—who among you can? Hope you all can—can all you raise, and raise all you can of this healthy esculent. Then, again, how essential is the tomato for fixing catsup—not to fix cats up by throwing tomatoes at them, though even as missiles they would doubtless prove efficacious. The refuse tomato cans could be used with equal effect to fix dogs up, if—in the language of the genial Erratic Enrique—you wish to curtail your house rubbish. What could better “pointer moral or adorn a tail?”

Finally, it is claimed that the consumption of the tomato produces cancer and the like. It has been fully demonstrated that the tomato is a perfectly healthy vegetable, therefore its consumption is a mere fallacy. It never has the consumption. As was recently remarked to a prominent physician: “We defy you to prove it, or to prove that tomatoes produce cancers—we don’t believe you cancer, in fact we know you can’t sir!”

Enough of the tomato—though we never—*i. e.*, hardly—!!! (I was going to say that we seldom got enough of them, when something struck me.) To conclude, let me hope all reasonable-thinking persons will see the force of our plea for the tomato, and enjoy them while the season is yet upon us.

TETOFSKY APPLE.

BY A. BRIDGE, WEST BROOK, ONT.

I am acquainted with a man in this Township who is the owner of a fine young orchard, in which he has quite a number of the Tetofsky apple trees planted, and he regrets very much that he planted any of that variety. He has condemned it on the ground that the fruit is poor, and the tree is a slow grower. I think this cannot be said of the Tetofsky on all soils. His soil is a sandy loam, and most of his trees are doing remarkably well, but the Tetofsky refuses to grow to his liking. I know the Tetofsky is a slow grower on some soils, and I also know that it will grow as fast as the general run of apple trees if it is planted on a soil that suits it. I consider the fruit superior to the Red Astrachan.

In 1876 I planted four two year old Tetofsky trees, two and a half feet high, without a limb on one of them. I planted one of these trees on a hard clay knoll, with a hard clay subsoil. I planted it very shallow, and did not loosen the subsoil as is generally done, but set the tree on the hard ground, and put fine earth about the roots. The tree commenced to grow at once, and formed a good head the first season, and has made a good growth every season since. The tree is now a beauty to look upon, being a little over nine feet in height. It has made sixteen inches of new wood this season, making an average yearly growth of sixteen inches, and does not get any manure except a few wood ashes scattered on the surface once a year. This piece of clay ground was of no value to me until I planted it with apple trees. I formerly planted it yearly with potatoes, but it was so hard I never got a crop from it.

I planted a few other varieties on this clay knoll at the time the Tetofsky was planted, and it would do a person good to see them. They are the finest trees of their age I have ever seen, and were all planted on the surface soil, hilling up a little to get the roots covered, and the subsoil was not loosened. I dig up the ground with a fork once a year, and keep the weeds down with a hoe. There is no other crop raised on this piece of land. The trees are planted ten feet apart. The Tetofsky came into bearing in 1878, and in 1879 it bore half a bushel very fine apples. The apples grew all around the limbs, and

looked like rows of onions braided up; and though it was so heavily loaded the limbs did not bend down. The limbs are all growing upwards, taking up but very little space. So much for the Tetofsky on clay soil.

I will now tell you a little about the other three trees. They were planted on a deep rich, loamy soil, with the subsoil loosened up; a soil that will raise corn and potatoes to perfection. These trees did not grow the first and second years; they leafed out and looked healthy enough, but did not make any new wood until the third year. They are growing quite nicely now, but the whole three trees put together would not make a tree as large as the one in the clay. I took more pains in planting these trees than I did the one in the clay, expecting they would make double the growth in a given time in such fine rich soil. The soil in both cases is very dry, being naturally drained.

My Glass' Seedling Plum is growing close to these three Tetofsky trees, in the same soil. It grows from four to five feet in one season, so that I am obliged to cut back half its growth to keep it in good shape. I also raise the finest vegetables from this piece of ground, which is sufficient proof that the soil is rich. It is a mystery to me what could make the tree in the clay grow so much faster than the same kind of trees planted in richer and better soil. Perhaps you or some of the readers of the HORTICULTURIST can explain the mystery.

CRANBERRY CULTURE.

We have received numerous enquiries from correspondents relative to the cultivation of the cranberry, in reply to which we submit the following from the *Massachusetts Ploughman* :—

Among the fruits that grow in New England, there are few if any that will grow on so great a variety of soils as the cranberry. The most profitable and the best location seems to be a meadow that has a peat bottom that can be flowed with at least two feet of water during the winter and spring, and be thoroughly drained in the summer. In such location the cranberry can be grown with as much profit as any other fruit.

If one has a pond that flows up several feet higher in the winter than in the summer, by filling in the borders with sand a good crop of cranberries can be grown for many years, without any expense after the first two or three years except that of harvesting the fruit. In such locations good crops will grow on four feet of sand, and to our knowledge will continue for more than twenty-five years without resetting.

In such locations the water protects the vines in the winter, and where it does not leave the vines until the last of May or the first of June, it protects the blossom buds against the spring frosts, checks the growth of grass, and at the same time gives to the vines just the fertilizing material they require.

He who desires to enter largely into the cultivation of cranberries should not be satisfied with the borders of a pond, but should look around until he finds a piece of land naturally fitted for the cranberry, and thus avoid heavy and constant expenses. When such location is found it will be a meadow with a peat bottom or never-failing stream of water flowing through it; the land so situated that it can be covered with water in a few hours at any season of the year, and kept covered at least two feet deep from December to May; also within a short distance of a sand hill.

When a piece of land of this description can be found it is cheap at any price under five hundred dollars per acre, and even at five hundred dollars per acre it will pay a very large profit if set with cranberries. In preparing the land it is best to remove the sod down to the peat, which in most locations will be worth more for manure than the cost of removal. The land should then be covered with at least four inches of sand; this can be done best and cheapest in the winter when the ground is frozen and the work of the men and teams is not so pressing. The vines should be set in May, as soon as the weather begins to be warm. If the water can be brought to within an inch of the top of the sand the vines can be set with greater ease and will be much more likely to live. Whatever may be said to the contrary, we believe it is always best to set vines that have roots. We have seen plantations set with vines that had been run through a hay cutter, under the direction of one who believed the tops were as good as the roots, but the result was a complete failure. The vines do best to set them in single roots, being first entirely freed from grass. The distance apart should not be over six inches each way. If the water is just the right height, the vines can be scattered over the sand and the roots pressed in with the fingers. Never set in rows two or three feet apart, for by so doing the vines will always be uneven, because by the time the ground is covered between the rows, the vines in the rows become old, with many dead vines; but if the vines are set all over the ground, by the second or third year the ground will be well and evenly covered with young vigorous vines.

There is a worm similar to the plum curculio which sometimes attacks the young fruit that grows upon land that cannot be kept covered with water during the winter. As the perfect insect winters near the surface of the ground the water probably destroys it.

It is very important to keep the weeds and grass out the first two or three years; after that if the land is well adapted to the fruit but little attention will be required, except to keep the land flowed at the proper time. As the weeds and grass must all be picked out by hand; the first year requires considerable time, and the second year will require more time than the crop will be worth, but it pays in the end to keep the vines entirely free from both weeds and grass.

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[No. 10.]

THE PRENTISS GRAPE.

Through the politeness of Mr. T. S. Hubbard, of Fredonia, N. Y., we are enabled to present to our readers a colored plate of this new white grape, a copy of which he has generously donated in this way to each of the members of our Association, and by which this number of the CANADIAN HORTICULTURIST is so handsomely embellished.

The history of this grape is simply this: Mr. J. W. Prentiss, of Pultney, Steuben County, N. Y., sowed a quantity of seed of the Isabella grape something over fifteen years ago, from which there sprang a large number of seedlings, of which this white grape was one. It would seem that either the results did not prove to be very satisfactory to Mr. Prentiss, or that in the multiplicity of matters requiring his attention he lost sight of his seedling grape vines and left them to shift for themselves, for we are informed that when he first noticed the fruit of this vine it was growing in the grass in a neglected condition. At length he was induced to take it up and plant it where he could give it better cultivation. Under improved treatment the vine improved, and manifested such good qualities, that, pleased with its fruitfulness and the flavor of the grape, he increased the number of the vines and planted them out for fruiting until he had some two hundred of them in bearing. About this time Mr. Hubbard, who is always on the lookout for new grapes of good quality, became aware of its existence, and pleased with what he heard and saw, made an arrangement with Mr. Prentiss to propagate and disseminate this grape, to which he gave, in honor of the raiser, the name of PRENTISS. Having grown a sufficient number of the vines, he now offers them to the public, and adopts this very generous method of calling the attention of the members of the Fruit Growers' Association of Ontario to his favorite.

We first saw this grape at the meeting of the American Pomological Society, held at Rochester, September, 1879, where Mr. Hubbard

exhibited the identical branch with its beautiful clusters of fruit, of which the colored plate is a very accurate representation. The appearance of the fruit and the pleasant flavor of the grapes, with which Mr. Hubbard gave us ample opportunity to become acquainted, made a very favorable impression. The berries are not as large as those of most of Rogers' Hybrids, though fully equal to those of the Concord. In color a yellowish green; in flavor very like the Rebecca, sweet, juicy and pleasant; free from what is termed "foxiness," that flavor so common in our hardy native grapes, and which is quite perceptible in the Concord.

Mr. Hubbard stated to the writer that the foliage was thick and healthy, and the vine a good grower and hardy, the buds having endured uninjured severe cold weather, with the thermometer twenty degrees below zero. The fault of the vine was that it was inclined to overbear, and that unless it was closely pruned the clusters should be thinned out by removing the excess. In speaking of its adaptation to a large area of country, he did not claim for it such extensive range as the Concord enjoyed, yet believed that in-as-much as it ripened its fruit at the same time as the Concord, it might be planted where the Concord and Delaware ripen, with confident expectation that it would succeed.

One of the excellencies claimed for this grape is its long keeping quality, it having been exhibited at the meeting of the Western New York Horticultural Society as late as the twenty-second of January in perfect condition. It is also said to bear shipping extremely well, and to bring in the markets of New York City fifteen cents per pound in large quantities, when the Concord was bringing only six cents and the Delaware nine. For these reasons, namely, its long keeping and good shipping qualities, combined with excellent flavor and attractive color, he is of the opinion that it will prove to be a very profitable market grape.

Doubtless many of our readers will be inclined to give this grape a trial. We have no doubt but that it can be grown with success, and that it will be found to ripen its fruit perfectly wherever the peach will thrive and fruit, and perhaps it will be found to do well in some parts of our Province where the climate is too severe for the peach to succeed. These things can only be ascertained by actual experiment, and we trust that such of the members of our association as plant this

new grape will favor our readers with the results of their experience in due time. We do not expect that it will be successfully grown in any locality where the Delaware does not ripen, but we do expect that wherever the Delaware matures its fruit perfectly there the Prentiss will succeed. Of this however there can be no question, that in all localities where it does do well it will be prized as a welcome addition to our list of table grapes.

JAMES DOUGALL'S SEEDLING PLUMS.

We have received from Mr. Dougall, of the Windsor Nurseries, two varieties of seedling plums of great excellence. He has not yet given them names, though in our estimation they well deserve to be named and cultivated. The variety marked "No. 5" is a large plum, roundish oval in form, stem slender, and about half an inch in length, inserted in a small cavity; color greenish yellow, covered with a white bloom. Flesh yellow, parting freely from the stone; sweet and juicy. Mr. Dougall states that the tree is a very strong grower, and very hardy. This is the first season of fruiting.

"No. 2" is about the same size as the one above described, and greatly resembles it in form and general appearance, having however a slight tinge of red on the sunny side, which is not to be found on any of the specimens of "No. 5" received by us. The color is yellow, dashed with stripes of light green, and covered with a white bloom. The flesh is yellow, parts freely from the stone, juicy, sweet and rich. This tree is also stated by Mr. Dougall to be a very strong grower and very hardy, and to have borne this year for the first time. Both of them are chance seedlings.

THE NIAGARA GRAPE.

The following, taken from the *Country Gentleman*, is from the pen of the horticultural Editor, Mr. J. J. Thomas, long known as a distinguished and able pomologist:—

A visit to the vineyards of H. C. Hoag, of Lockport, furnished us an opportunity for examining several hundred vines of the Niagara grape in bearing. As much interest has been felt by the grape-growing public as to the character and value of this new variety, we give briefly the result of our examination. One of its most striking characteristics is the great vigor of its growth. Shoots of the present season half an inch in diameter

and fifteen feet or more long were common. The great productiveness of the vine, and the size and beauty of the bunches and berries, were conspicuous qualities. The leaves are thick, distinctly lobed, and hang long on the vines. The bunches often measure six inches long; they are compact, uniform and handsome, and the berries are three-fourths of an inch in diameter, light greenish-yellow, the fruit ripening about as early as the Hartford, but continuing longer, and they are much superior in quality to the Concord. We had occasion to observe that different judges rated the quality variously, some making it equal to, or better than the Rebecca; but we could not place it so high. It appears to be intermediate between the Hartford and Concord on one hand, and the Croton and Duchess on the other. But the vigor, productiveness and healthiness of the vine, the size and beauty of the fruit, and the facility with which it may be shipped, present an unusual combination of valuable qualities for market. A part of Mr. Hoag's vines were set in 1879, and now, in their second season of growth, were bearing well. Those which were two years older had heavy crops. In the vineyard of B. W. Clark a one-year green-wood plant had been set in 1878, and bore 25 clusters the following year, weighing 19 lbs., and this year we found 57 bunches on it. One of the canes measured nine-sixteenths of an inch in diameter, and was 18 feet long. The Niagara vines are not offered for sale, but the grape belongs to a company, who plant it exclusively for vineyards, and have now twenty acres in different stages of growth. This variety was originated by C. L. Hoag from a cross of the Concord and Cassady, and it is wholly a native.

The Lady grape was in fine bearing at B. W. Clark's; is about as early as the Niagara, and was pronounced by all who tasted the two not quite equal in quality to the Niagara, which it resembles in the external appearance of the berries on smaller bunches.

MOORE'S EARLY.—Mr. Hoag has a large number of vines of Moore's Early, which we found much better in quality than the specimens we had seen at exhibitions. It is superior to the Hartford, and about ten days earlier. This year it ripened about the middle of August.

PLUM CROP AT OWEN SOUND.

Mr. Vice-President Roy writes:—

Our crop this year is simply enormous. No wonder that plum trees are short lived, they do so overbear on clay loam impregnated with lime. I have a fine lot of the Glass Seedling; will send some. I find a great many of all varieties rotting on the tree this year. McLaughlin is laden to the ground. I am told by dealers that upwards of two thousand bushels sometimes arrive at Owen Sound in one day. Our market is Chicago, by boat. Apple crop large. Pears far below an average. Grapes are a very large crop. Raspberries were very fine. Strawberries rather poor. All this northern country has been favored with large crops. Fall wheat all that could be desired in quantity and quality. I was at Toronto lately, and found the crops from Owen Sound to Orangeville better than I ever saw them before.

LAYERING GRAPE VINES.

BY P. E. BUCKE, OTTAWA.

In the present age, when the extension of grape culture is all the rage, and many new varieties at high prices are being introduced, it will be interesting to some of the readers of the HORTICULTURIST to know the best and most rapid method of propagating the vine. It may be thought out of season to enter upon this subject at this time of the year, but as many prune their vines in the autumn, and all ought to do so, and as my method of proceeding greatly rests on the growing and pruning of the vine, it has occurred to me that the present season would be as suitable as any for my remarks.

In the first place, then, the pruning of the present year should be so conducted that long stout canes, originating as near the base of the parent plant as possible, should be selected. The side shoots must be removed during the summer as they appear, and the canes allowed to run as long as they will. From a strong, healthy vine in good soil, these shoots may frequently be had from twelve to fifteen feet long, and sometimes much longer.

In the spring when the vines are uncovered,—as they are here towards the end of April, or at such a time in the west before the vine begins to start in the spring—a trench should be opened about four inches deep in the shape of a V, the soil where the layers are to be put down having previously been made loose, rich and pliable. Into this trench the vine should be pegged down, but *no earth put in until the vine has made about a foot of growth*, which it will do at each of the eyes, and all these shoots will point straight upwards. At this stage of the proceeding the earth must be carefully replaced in the trench. The hand is perhaps the best to do this operation, as the shoots are very tender at the base. In the autumn or next spring the vine may be cut between the plants with a sharp spade or knife, and the layers should be removed from the soil very carefully with a digging fork, so that the small tender roots may not be stripped or peeled; these plants may then be heeled in for future use. Layers made in this way will bear a full crop during the year they are put down, and if the soil is good in which they are propagated, and they are carefully handled when taken up in the autumn, and heeled in during the winter, so that any fractures in the roots may get a new bark over them, these

layers will produce a small crop during the first season of planting. I have vines propagated in this way from the Burnet during 1879, from which I had to remove a large number of branches this spring to keep them from over-bearing. No layer-cut, wiring, or any other process is required; the main feature is not to cover the layer until the buds have well started some inches above the ground.

THE ENGLISH CARROT, (*Daucus Carota*.)

BY J. FLETCHER, OTTAWA.

Referring to Mr. Claypole's most interesting note on the English Carrot in the September HORTICULTURIST, I may state that this plant is found as an "escape from cultivation" in several localities round this city; as to its being a "weed" depends upon the meaning attached to that word. The whole of this question would be a most interesting one for the botanical society advertised by the Association last year, and which I am in hopes may still be formed in connection with it. There is no doubt that a knowledge of botany would be of great service to horticulturists. They can do without it, it is true, by profiting by the botanical researches of others, but why not investigate and discover for themselves?

There are perhaps no more striking examples of the effects of cultivation of wild plants than are presented by the Carrot and Parsnip. Different as the wild and cultivated forms of both are, they have been proved by experiment to be identical. From the wild, woody root of two or three inches in length and half an inch in diameter, can be produced by the fairy cultivator the fleshy and succulent vegetables we know so well.

I am afraid the Carrot will not prove such an accomodating visitor as Mr. Claypole states the Canadian Thistle (*Carduus arvensis*), has been in his district. The curious birds'-nest shaped umbels of seeds of the Carrot certainly ripen freely here, and the individual seeds, although not provided with wings of down, as those of the thistle are, have yet received from Dame Nature ample means of dissemination in the shape of a miniature armament of bristles and hooks, by which they attach themselves to cattle and other objects coming in contact with them, and are thus carried in all directions.

The Carrot, (an anglicised form of the specific scientific name, *Carota*, which has its origin in the Celtic word *car*, meaning red, from the color of the root,) was described as being cultivated for its esculent root by Dioscorides, who is supposed to have lived in the time of the Roman Emperor Nero, and since his time it has been in constant use by various nations. But it was not until the reign of Queen Elizabeth that it was generally cultivated in England, when it was introduced by the Flemings into Kent, whence it has gradually spread over the whole kingdom, and is now very common and generally distributed, springing up on dry banks, ridges of fields and in pastures.

Carrots contain a large amount of water, but their most important dietetic substance is sugar. They have also small quantities of starch and albumen. In some parts of Europe a spirit is distilled from the roots, the sugar they contain being easily convertible into alcohol. About 160 pounds of crushed roots yield one gallon of spirit. In Germany a substitute for coffee is made by chopping the roots into small pieces and roasting them. Horses are very fond of Carrots, and when mixed with oats they form very good food for them.

Pretty objects for winter decoration may be made by cutting off the crown of a Carrot and placing it in a saucer of water with moss round it. The green feathery leaves soon sprout out, and the whole has the appearance of a lovely and delicate fern.

HORTICULTURAL GOSSIP. XI.

BY L. WOOLVERTON, GRIMSBY.

PEACHES IN 1880.—This season peach growers have had their hands full—of peaches,—not of money. The crop has been unprecedented in the history of Canadian peach culture, notwithstanding that a good crop preceded it in 1879. The heavy crop is not by any means a misfortune, though everybody says it is. Peaches are being introduced to country towns, where they were before unknown. Facilities are being gained by shippers that would not have been thought of in a season of light crops. The Express Company, slow to move in the matter of accommodation to shippers, has been shown its want of proper accomodation. Several times this season they were unable to receive one half the peaches waiting shipment. They encourage the expectation of shelved cars to central points in future.

PACKAGES.—The old fashioned crate has been entirely thrown aside as a package for peaches. Baskets can now be had so cheap that there is no object in using crates in point of economy; and the fruit commands better prices in baskets set off with colored gauze. Indeed, many fruits that were once put up invariably in barrels are now being sold in baskets, as for instance, pears, choice apples and select onions. During the past season select Red Astrachan Apples have sold at sixty cents per basket.

An excellent crate basket for berries has been invented in Grimsby. It is a handle basket, holding twenty-four baskets, in three layers of eight each, with the usual slats dividing them, and a cover. The basket will cost about ten or twelve cents, and may be sold with the fruit; the express charges on the twenty-four quart wooden crate being about as much as the price of the basket. The advantage is that the crate-basket, besides being light to handle, can be reshipped from central towns to points where wooden crates could not be sent for fear of loss or long delayed return.

DESIRABLE VARIETIES OF PEACHES.

The AMSDEN'S JUNE has not proved itself to be a desirable variety, being no earlier than High's Early Canada and not so large.

The ALEXANDER and EARLY CANADA have both been grown in large quantities in the Grimsby section this season, and still the matter of distinction is difficult to solve. One grower says he sees the chief difference in the period of ripening. The Early Canada comes in a little the soonest, and ripens more unevenly than the Alexander, so that it sometimes hangs on the trees a week longer than the latter. This peach has on the whole proved itself well worthy of general cultivation, and may be called the peach of its season. Though on account of the very heavy crop it was this season smaller than usual, yet it was plump and round and finely colored. No peach during the whole season has been more remunerative.

The RIVER'S SEEDLINGS do not all come up to expectation, though it is unfair to judge of them from such an excellent season of superabundance.

The BEATRICE was very small and much too soft for shipping well.

The EARLY LOUISE was also small and lacking in flavor.

The EARLY RIVERS was most satisfactory. Notwithstanding the prodigious quantity of fruit with which it was laden down to the ground, it reached a fine size, and a great many specimens attained a reddish cheek, so that with careful picking and shipping it brought the highest price.

The HALE'S EARLY has never done better in this section. It has certainly redeemed its character. No peach has ripened better, and no peach displayed such beautiful colors or reached a fairer size, so that altogether it has proved itself this season a most satisfactory and profitable peach.

The EARLY PURPLE has not done itself justice. It had no color, and was the smallest of the small, so that we were glad to see the last of it.

The market has been glutted with EARLY CRAWFORDS, and the price has been weighed down beyond all precedent. Though it fully deserves to be called "the peach of the season," yet it is easy to have too much of a good thing, at least in fruit culture, and this peach poured into the markets faster than it could be distributed. No sooner were they over than prices took an upward tendency.

The grower now-a-days is fortunate who has a good many OLD MIXON and LATE CRAWFORDS. The latter is accounted a very poor bearer, but this season it has not deserved such opprobrium, for it has been laden to the ground. The Old Mixon is a peach too much neglected. It will hang until the Early Crawford are done, and then come in most opportunely. Those who know it esteem its quality as superior to the Early Crawford. It is a noble old peach, and has not yet found its peer in the peach family.

The LEMON CLING is this year more profitable than the Early Crawford, though so much inferior. The latter have been sold in some orchards here as low as twenty-five cents a basket, while the former is worth double that price, because it has scarce any competition in the market.

The SMOCK completes our list. The trees are as full as it is possible for trees to be, and last year they were the same. The fruit has a beautiful golden red color, and though not yet harvested, (Sept. 18,) it promises as well as any of its predecessors.

OUR NATIVE WOODS.

We thank the *Iowa College Quarterly*, issued by the Agricultural College, for calling attention to the absurd fashion which prevails so largely at the present time of finishing the interior of our dwellings with pine, and then painting it with imitations of our natural woods, when the real article can be had with a delicate graining far more beautiful and enduring than the best work of the painter's brush. We give the article in full, and trust that the readers of the CANADIAN HORTICULTURIST will be benefitted by the perusal.

It is a remarkable fact that, while in many parts of the west the timber belts that are close at hand contain an abundant supply of excellent building material, nearly all our buildings, public and private, are furnished from basement to ridgepole with an inferior wood brought from a distance. For outside work in wooden structures, however, this wood is the best that the country affords. Pine shingles, when properly made and laid, and pine weather-boards well painted, make most effective coverings for roof and wall. But when it comes to the inside finishing, it is certain that the builder would profit by a change of material. Three things are now exclusively used for inside work, namely, pine, paint and plaster. All three are objectionable on the score both of economy and good taste. For stucco, (plaster of paris,) is superior to common mortar; polish is better than paint; and the native woods are certainly superior to pine.

It is true that pine, being a soft wood, is easily worked, and that consequently pine window and door casings, baseboards, etc., can be got out and put up with less expense than those of hard wood. But it is the softness of pine that renders it unfit for inside finishing, since it is so easily defaced by the wear and tear to which it is subjected in living rooms. Moreover, pine casings, doors, etc., must be covered with paint by reason of the fact that when left bare or finished with oil the wood grows dark and dingy. Not so with the hard woods that grow on the borders of our streams. Nearly all of them will take a polish, which, when finished with oil or covered with varnish, presents a bright and beautiful surface that will last for centuries. A sugar maple board, for instance, will, when well seasoned and well worked, show a white, smooth, hard finish, with fine and delicate graining. Oak, (both red and white,) furnishes a surface that no pigment can equal; and the grain of the latter is, as everybody knows, especially rich and varied. So too, white ash, when reduced to smoothness, displays in its graining a variety of patterns which are far more attractive than any color whatever laid on with the brush. Now these bright, close grained woods, which are so imperishable and so susceptible of a beautiful polish, can be got in Iowa at a lower rate per thousand than pine of a like grade. Why then should we go on using a defective wood for inside work, and covering it with spurious imitations of the natural grains, when the genuine originals, thus coarsely imitated, are within the reach of all? The intrinsic value of our native woods for floors may be urged with equal force. It is

true that if the floor is to be perpetually hidden by that uncleanly article, the carpet, then third-class pine is as good as any other lumber; but if a better taste should ever lead us to discard this dust gathering nuisance, then the hard woods will come in play. For the best and most desirable floors, whether plain or ornamental, are made in this country of such woods as maple and oak.

MORE TREES AND SHELTER BELTS.

Few people realize the enormous draft made upon the forests of our country. Where does all the timber come from? From remote timber lands which are growing further off each year. The price of lumber will get higher at a rapid rate, as this vast destruction goes on. What are farmers doing to counteract this depletion, and to provide for the future? Nothing, except in some of the treeless States, where here and there some efforts have been made to provide wind-breaks, and to plant out groves. It must be that farmers do not like long investments, and so they do not lay the foundation for future fuel and building material. When we know what the future will require, it is wise economy to provide for it. Ten years hence not less than 20,000,000 railroad ties alone will be needed annually. Fence posts by the million will be wanted, while the immense consumption of lumber of all kinds will be largely increased. The farmer should provide for this certain demand of the future. When once planted, started, unlike most other things, forest trees take care of themselves. Here is an investment with a sure profit. There are millions of acres of rough land, hillsides and untillable spots, which could be clothed with forest trees growing into money. This is not an ardent tree planter's theory, but a truth which has been often demonstrated.

Locust trees planted at Kirby Homestead fifteen years ago on a steep hillside have furnished ten posts each. In the Legislature of New York State a bill has been introduced to make it obligatory upon every county to spend \$500 yearly in encouraging tree planting. Farmers should do this work for future profit, and there ought to be a universal and systematic interest in it. Seedling forest trees can be had at so cheap a rate that the first cost is but a trifle. They are furnished at a cent apiece, and sent by mail. In twenty years the investment of a cent would be three or five hundred times greater. Unsightly places may be made attractive, and shelter-belts be provided, which will add largely to the value of other lands. Early Spring, before any new growth has begun, is the best time to transplant evergreens, but it may be done successfully in July and August, if plenty of water is used to wet the ground and the roots, and if the roots are not exposed to the hot sun. Water enough should be thrown into the hole where the tree is set to saturate the ground thoroughly, and dry earth be put on top. It would be better if some kind of mulch—leaves or straw—be placed on the surface. All kinds of trees delight in mellow ground, and are far more likely to live when the land is in this condition. Shelter belts may be an idea in advance of Eastern notions, but it is one which should be put in practice without delay.—*N. Y. Tribune.*

THE CHINESE SAND PEAR NOT BLIGHT PROOF.

We copy from one of our exchanges the following, which is credited to P. T. Quinn in "American Garden." There is one element wanting in this experiment to settle the question of the liability of the Chinese Sand Pear to blight, and that is this: Mr. Quinn seems to say that he grafted on healthy pear trees the Japan Pear, seedling of the Chinese Sand Pear. Now may it not be that the Japan Pear thus grafted on the common pear becomes by this union subject to blight, when if grown on its own stock it would be exempt? However the trees that are being offered for sale as blight proof because they are hybrids between the Chinese Sand and the common pear, are doubtless worked upon the common pear, and all claim to immunity from blight seems to be proven to be unfounded by the experience of Mr. Quinn. Have any of our readers planted any of these hybrid sand pear trees? If so, have they blighted? True, the fact that they have not yet blighted does not prove that they will not blight, and considerable time will be needed to ascertain, by introducing them into different sections of the country, and on all varieties of soil, whether they will be any less subject to it than our common pear trees. If they should prove to be less subject it will be some gain, provided the fruit is well flavored.

Some ten or twelve years ago I planted and grafted on healthy trees the Japan pears, seedlings of the Chinese Sand. These sorts have all the traits of their parent, in vigor of growth, rank foliage, which for brilliancy of color in the fall equals the red flowing maple, and besides being prolific bearers. The fruit seemed proof against insects, while the growth and habits of the trees seemed to defy attack from any source. My plan was to propagate these varieties and graft the slower growing sorts on them, and in this way get a more vigorous growth of wood, and possibly larger fruit, of sorts like the Seckel.

Until last year I had no reason to doubt that those Japan pears were blight proof. But now I have good reason to think differently. The fire blight struck these trees early last summer, and what is unusual it destroyed every branch and twig of several large trees, not leaving me a single sprig of wood to propagate from. This wholesale destruction of these kinds is more curious because we had only one more instance in the orchard during the year, and that was a couple of large branches of a Swan's Orange tree in a distant part of the orchard. This experience settles the question in my own mind that it is folly to assert that the Chinese Sand, or seedlings from it, are blight proof, for the instance which I have stated above prove to be the contrary.

THE EARLY GRAPES OF 1880.

Not slowly, indeed, yet surely, is there progress being made in the number of varieties and the quality of our early ripening grapes. It is but a short time ago that we had no early sort. The Isabella and Catawba were all the sorts we had, the latter rarely coming to perfection, save in the most favored locations, on the north shore of Lake Erie, or on some of the islands that have now become famous for their fine grapes; the former hardly coming to perfection beyond the limits of successful peach culture. Now we have many sorts of varied flavors and qualities, extending their period of ripening from the latter part of August until the coming of winter.

For some time the Hartford Prolific was our earliest grape that could make any pretension to good quality. Blood's Black is early indeed, but in point of quality it is simply awful. The King became black early, and so did the Sherman look as though it were ripe, but both of them retained such a keen acidity that no one without making a wry face could eat them before the advent of autumn frosts, which seemed to be necessary to the amelioration of their superabundance of tartaric acid.

The advent of the Eumelan revived the hope of an early grape of better quality, and such was the promise of value, that the Fruit Growers' Association imported a quantity of the vines, and presented one to each member for trial. Beside this there was the Israella, which it was thought would take the place of the Hartford Prolific. The Perkins came in for a share of attention, and the Cassady and the Telegraph. Rogers' Hybrids marked a new era, and of these the Massasoit by its early ripening showed that progress in that direction had not ceased. Then came the Champion, which by the great hardiness and vigor of the vine and early ripening of the fruit, extended the limit of grape culture far to the northward of previous possibility.

And here we seem at present to be standing, having no variety that ripens any earlier than the Champion, none that possesses more vigor of constitution, more able to resist cold, and to ripen its fruit in the short hot weather of northern summers, but waiting and hoping some other will appear having all these very desirable characteristics, and yet better

in quality, in which direction there is, in the writer's opinion, considerable room for improvement. Since the dissemination of the Champion, other varieties have appeared which are certainly better in quality, but whether they will be found to possess as hardy and vigorous a constitution, and consequently can be successfully grown as far to the north, can only be known after some years of trial. The Champion was perhaps the first to ripen this season, but the Moore's Early came so close upon its heels that it was hard to say which of them should be called the earliest. Moore's Early is as good in quality as the Concord, and might be readily mistaken for that variety, both in the flavor and appearance of its fruit. The vine is even more vigorous, and ripens its wood much earlier than the Concord, thereby giving good promise of being able to endure the climate of our northern counties. Both of these varieties ripened before the Hartford Prolific, and both possess much greater power of resisting the effects of severe cold. In fact the northern limit of the profitable culture of the Hartford Prolific is soon reached.

Within a very few years another grape has appeared, which ripens at the same time with the Hartford Prolific and just after Moore's Early and Champion; it is called the Niagara. This is a white grape, and gives promise of being one of the most valuable sorts we yet have. The quality of the fruit is superior to that of either the Champion, Moore's Early or Hartford Prolific. The color of the fruit is very attractive, having that beautiful semi-transparent appearance which is found in our light colored hot-house grapes. The bunches are large and usually well shouldered, berries large, and the vine exceedingly prolific. These four varieties constitute the early grapes of to-day; each has its own qualities and its own excellencies. The Champion is grown profitably as far north as Montreal, where the Hartford Prolific would surely fail to endure the winter. Moore's Early and Niagara are too new to admit of confident assertions of their ability to rival the Champion in their power to endure the climate of Quebec, or of our more northern sections, but they are both of them so far superior to it in excellence of flavor; size of bunch and beauty of appearance that they deserve to be planted and tried in every section of the Province. There is great reason to believe, judging from the appearance of the vines, that they will prove valuable in a great part of Canada.

THE BENEFITS DERIVED FROM THE USE OF ARSENIC WATER.

Two or three weeks since we spent a few hours in the immense orchards of A. R. Whitney, of Lee County, Illinois. He has recently had his orchards scourged with the canker worm. After trying various remedies the pests were wholly eradicated by sprinkling the foliage, by means of a force pump, with water poisoned with London purple. At once on entering the grounds, the unusual health, size, and perfection of each individual leaf attracted our attention. We had recently been over several large orchards in DuPage County, and in the Fox River section, where a perfect leaf was difficult to find. Insect enemies during the past dry season have increased to such extent as to seriously injure the vitality of the trees by injury to the foliage. While Mr. Whitney had aimed mainly to destroy the canker worms, he had evidently about eradicated all the pests injurious to the leaf. This is a subject worthy the attention of our orchardists. Only a day or two prior to this visit to the orchard of Mr. W., at the nurserymen's convention in Chicago, Mr. Woodward, of New York, made the statement that some of his neighbors had destroyed the codling moth by sprinkling the trees with a solution of London Purple at the time when the apples were just forming, and while the embryo fruit was yet in an upright position. It is true that this statement was received by experienced members with many grains of allowance, yet we have since learned that all orchards treated at this time with the poison were not only ridded of the codling moth, but of noxious insects preying on the foliage. We predict that the use of arsenic water and London Purple will become more general for fighting our insect foes in the very near future in agriculture and all divisions of horticulture.

—*Iowa College Quarterly.*

PAMPAS GRASS.

BY JOHN McAINSH, ST. MARYS.

This is a half-hardy plant, not being able unprotected to withstand the severity of our Canadian winters. I have successfully wintered it over the past two winters by covering it with a box one foot high without either top or bottom. I fill the inside with pea straw, and bank up the outside with earth.

This is the finest ornamental grass with which I am acquainted. In the autumn it sends up strong stems eight or ten feet high, on the top of which are borne beautiful plumes of feathery tassels, which when waving in the breeze have a grand effect. After the plumes are cut they can be preserved for a considerable length of time. It is propagated by seed or by division of the roots.

CORRESPONDENCE.

D. B. HOOVER'S APPLE.

Mr. Hoover writes us that he has received a letter from the Canadian nurserymen to whom he wrote stating the treatment he had received at the hands of an agent supposing him to be in their employ, to the effect that they had no agent acting for them at that time. This much Mr. Hoover thinks is due to the Canadian nurserymen.

A VETERAN MEMBER.

Mr. Geo. Winslow, Millbrook, writes that a man who cannot cross the floor without the assistance of a stick ought to give up gardening, but nevertheless he sends his subscription for this year, saying:—

I think your Association has done good to the country, and I hope it may get on well; there is much good information in its publications. I expect the Burnet Grape and Clapp's Favorite Pear to fruit this year. I have at present three kinds of raspberry; the Diadem is much the same as one of those I had. The Isabella Grape does not ripen every year. I cannot get what I call good gooseberries; they are far inferior to those I had in poor Ireland. I got a Yew tree from there last year; it looks delicate, the winter has been too severe for it. I think the Crofton Apple, so well known in the north of Ireland, would do well here; it is a hardy winter fruit.

WHEELING, West Virginia, Sept. 23rd, 1880.

Dear Sir:—With the greatest pleasure I have seen in No. 7, Vol. III of the CANADIAN HORTICULTURIST, that an interest for a flora of Canada has been awakened amongst the members of the Fruit Growers' Association of Ontario. During my stay of five years in Canada I very often have felt the need of such a work. A few years ago I commenced to write a flora of the Province of Ontario, and to illustrate it by drawings made by myself according to nature. It is indeed a difficult enterprise, but having formed the plan once it should not be laid aside unfulfilled. In my hours of leisure I have completed nearly 200 plates, and hope to bring the whole work to an end with the spring of 1881. If an occasion should offer I would not fail to lay before you for examination that part which is done, in order to have your judgment. Having lost different species of the *Cyperaceæ* and *Graminæda*. I wish to ask you to publish this in your next number, and to request at the same time those members who have collected *Cyper. Gram.* to send me their address, so that I can enter into correspondence with them.

Hoping my petition will be granted,

I remain, very respectfully, your obedient servant,

REV. A. SCHAFFRANEK.

Phil. D., and President of the Natural History Society of West Virginia,
Box 424, Wheeling, W. Virginia.

The Canadian Horticulturist.

VOL. III.]

NOVEMBER, 1880.

[No. 11.]

SOME NEW HARDY APPLES.

We have recently received from Wisconsin some new varieties of very hardy apples, which are being grown in that State because of their good qualities and their ability to endure the rigor of the climate. We give the readers of the CANADIAN HORTICULTURIST a brief description of each sort, in the hope that some of them may be found to be valuable for the colder parts of this Province.

HICKS.—This is a very handsome fruit, of medium size, light yellow in the shade, with a bright crimson cheek in the sun, and sprinkled with numerous russet dots. Flesh white, juicy and fine grained, with a mild sub-acid flavor. The stalk is short, set in a narrow, russeted cavity, and the eye is closed, lying in a very regular moderate basin. The specimens received seem to be quite ripe at the present time, twenty-sixth of October.

MARTHA.—This apple is quite egg-shaped, nearly red on a deep yellow ground, and striped and splashed with bright red, sparsely sprinkled with minute gray dots. Stalk is stout and short, set in a shallow cavity, basin shallow, somewhat wrinkled, calyx closed. Flesh very light yellow, fine grained, with a very mild, somewhat aromatic flavor. Core quite large, in this respect resembling the Yellow Bell-flower. This is also quite ripe now, but will usually keep well until the holidays.

WATE.—A very pretty apple, of medium size, having the skin prettily marbled with red on a rich yellow ground, splashed and striped with dark purplish red. The stem is inserted in a very deep, regular, russeted cavity, the eye closed and set in a regular basin of moderate depth. The flesh is white, stained with red next the skin, a little coarse in texture, with a very pleasant, mild sub-acid flavor. These specimens are fully ripe.

NORTHFIELD BEAUTY.—This variety originated in Vermont, and well-deserves the name of "Beauty," for it is one of the most attractively colored varieties to be met with anywhere. Dr. Hoskins says it "is first-class. In hardiness it stands at least with St. Lawrence, and is probably hardier. It comes to bearing as early as Fameuse, and bears freely. In size is medium to large. Shape nearly round, regular and smooth. Does not spot or crack. Color yellow overspread with bright carmine. Skin delicate and wax-like. Flavor mild, sub-acid and spicy. Quality best for dessert. Season succeeding the Fameuse, and sometimes keeping all winter. Its fault is its tender skin and flesh, which prevents it from being a good shipping apple."

WOLF RIVER is a very large and showy apple, sometimes measuring fifteen and three-quarter inches in circumference, and weighing twenty-one ounces. The color is a beautiful bright red, striped with dark red, and sparsely sprinkled with large gray dots. The stem is very short, set in a deep, narrow and russeted cavity; calyx open, in a deep, somewhat irregular basin. Flesh white, fine grained, juicy, rich, and very pleasant sub-acid flavor. It is a late fall and early winter fruit.

WILLIE, is of medium size, deep rich red in color, splashed with deeper shades of red, slightly conical in form, stem short and set in a broad but regularly formed cavity; the calyx is closed and set in a very shallow basin. Flesh white, stained with red, fine grained, very mild sub-acid. Late autumn.

ADDA, is of medium size, conical in outline, skin light yellow, and very prettily overspread with bright red, dotted and splashed with deep red; stem short, inserted in a shallow russeted cavity; calyx closed, in a broad, shallow, slightly corrugated basin. Flesh nearly white, fine grained, juicy, not rich, acid. Seems not to be a long keeper, probably in season in December.

HUNTER, a large, decidedly conical apple, skin deep red, splashed with very dark red, sparsely sprinkled with dark brown dots. Core large, flesh white, very fine grained, with a pleasant, mild sub-acid flavor. These specimens are fully ripe, and its season is November.

MORSE'S SWEET appears to be a good keeper. The skin is light green, overspread with brownish red on the sunny side, a large russet patch around the stem, and small patches of russet scattered over the surface, with numerous russet dots. Size large, form roundish, flattened at both ends. Flesh white, very fine grained, sweet and rich.

WATE'S BLUSH, is of medium size and very beautiful appearance; form roundish, flattened at the ends; color bright yellow, with a rich, almost scarlet cheek on the sunny side, stem short and very slender, inserted in a deep, regular cavity; calyx closed, in a very shallow, wrinkled basin. Flesh yellow, very fine grained, juicy, sprightly sub-acid.

WAUPACA.—A most magnificent looking apple, of very large size, conical in form, skin yellow and slightly russeted, nearly covered with bright red, and profusely sprinkled with russet dots. Stem very short, stout, and set in a broad deep russeted cavity. Calyx open, segments upright, basin deep, almost perpendicular, regular, and moderately corrugated near the bottom. The whole appearance reminds one strongly of the Blenheim Orange. Flesh yellowish white, not fine grained, with a rich, pleasant, mild sub-acid flavor. Core remarkably small. Season is probably not beyond November.

HUBBARD.—This variety is of medium size, somewhat conical in form; skin yellow, overspread with red on the sunny side, sprinkled with numerous small gray dots. Stem slender, medium length, set in a deep regular cavity. Calyx nearly closed, segments erect, basin shallow and regular. Flesh yellowish, very fine grained, juicy, rich, sub-acid, quality very good. Seems to be a good winter sort.

WEYAUWEGA.—A very handsome, large, regularly formed apple. Skin yellow overspread with red, striped and splashed with deep red. Stem short, inserted in a narrow, regular, moderately deep cavity; calyx closed in a broad shallow regular basin. Core small, flesh white, very fine grained, juicy, with a pleasant mild sub-acid flavor. This is a good keeper.

RICH'S GREENING is large, nearly conical in outline; skin at this date (1st November,) a clear bright deep green; stem stout and short, inserted in a narrow, regular, not very deep cavity; eye closed, in a very shallow, slightly wrinkled basin. Flesh very fine grained, yellowish, juicy, rich sub-acid. This variety is evidently a long keeper, and it is not possible to say what will be its flavor at maturity.

EDITHA is also large and very pretty in appearance. Skin light, yellow with a warm rosy cheek, thickly sprinkled with light gray dots. Stem inserted in deep, regular cavity; eye closed, basin shallow, regular and smooth. Flesh white, fine grained, juicy, mild sub-acid, not high flavored.

EVALINE.—Large, roundish, somewhat flattened, yellowish-green with a rich shade of yellow on the sunny side. Skin smooth, oily and fragrant, and dotted with numerous white specks. Stem stout, short, inserted in a very narrow russeted shallow cavity; calyx closed in a very shallow broad and slightly wrinkled basin. Flesh yellowish, very fine grained, juicy, exceedingly pleasant.

BLOOMFIELD, is of large size and most attractive appearance, the color being a very deep red, striped and splashed with dark red. Stem very short, in a deep but narrow russeted cavity. Eye closed, in a very shallow irregular basin. Flesh white, fine grained, juicy, pleasant sub-acid.

FANNIE.—Very large, deep red, thickly sprinkled with small white dots. Stem very short, inserted in a deep, regular, russeted cavity, calyx open, in a broad regular basin of moderate depth. Flesh very fine grained, yellowish-white, not very juicy, rich, with a very pleasant, almost pearmain flavor. This seems to be a good keeper.

MARIETTA, is from medium to large, handsome, red on a yellow ground, striped with purplish red; stem very short, inserted in a very narrow regular cavity; calyx closed in broad shallow wrinkled basin. Flesh nearly white, fine grained, exceedingly tender, juicy, mild sub-acid. A winter variety of great promise.

CARRIE is of medium size, conical, yellow ground beautifully mottled with red on the shaded side, becoming deep red in the sun, and striped with dark red. Stem long, very slender, in a deep, narrow russeted cavity; calyx closed, in a broad, wrinkled and very shallow basin. Flesh white, stained with red, fine grained, juicy, pleasant sub-acid.

BENNET is somewhat above medium in size, having considerable resemblance to a Baldwin in form and color, and profusely sprinkled with small gray dots. Stem very stout and short, in a very broad shallow cavity; calyx nearly closed, in a smooth, regular basin of moderate depth. Core very small; flesh yellow, very juicy and very fine grained, crisp, rich and very pleasant mild flavor.

These varieties are worthy of the attention of those who reside in the very cold parts of Canada; and coming, as they do, from a State where only the most hardy sorts, such as Alexander, St. Lawrence, and Duchess of Oldenburg will succeed, there will no doubt be some among them that will prove to be of great value in those sections.

MARKETING OF APPLES.

The production of this staple fruit has now increased so much that it has become an article of commerce of sufficient magnitude to command the attention of commercial men. Apples are now being shipped from Montreal by the tens of thousands of barrels, and are commanding in the home market from nine to thirty shillings sterling per barrel, according to the kind and quality of sample.

Circulars received from Mr. Geo. A. Cochrane, Liverpool, shew that on the sixteenth of October Baldwins were bringing from eleven to fifteen shillings sterling, notwithstanding the fact stated by him in his circular, that "most of the Baldwins that have arrived so far lack color, showing their having been picked too green; those of good color have sold fairly well." Colverts, Gravensteins and Northern Spys are quoted at the same figures, from eleven to fifteen shillings sterling per barrel. Fameuse or Snow Apples and Pomme Grise were bringing from fifteen to seventeen shillings, Twenty-Ounce Apples from thirteen to nineteen, Ribston Pippins from fourteen to thirty shillings. Those that brought from twenty-five to thirty shillings were extra fine Ribstons. The apple that brings the highest price is the Newtown Pippin, this variety ranging from twenty-five to thirty-five shillings sterling per barrel. The R. I. Greening does not seem to be in demand in that market, the price varying from nine to fourteen shillings, and Mr. Cochrane remarks that "Greenings are far too plentiful, and the finest have sold at from twelve to fourteen shillings." The Swaar also rules low, being quoted at from nine to twelve shillings, and on the other hand the King of Tompkins County stands at from twelve to seventeen shillings.

The receipts at Liverpool for the week ending on the sixteenth of October were sixty thousand and sixty-seven barrels, being the heaviest ever known, and yet notwithstanding such unprecedentedly heavy receipts, and advices of equally large shipments to arrive, the market had given way only about two shillings per barrel on the average run of fruit, while extra good conditioned fruit maintained last week's values and in some cases exceeded them.

That the apple trade has become an important industry of this Province is quite apparent, and it is destined to assume yet larger proportions if properly managed. Some very sensible suggestions on this

subject were made by the *St. Catharines Journal* in its issue of the eighth of October, which are well worthy of the earnest and careful the attention of fruit growers of Canada. We take the liberty of quoting some of them and of calling attention to them, for they are replete with sound wisdom. The writer says that "none but the very best varieties should be cultivated, and they are all comprised within a dozen sorts." We desire most particularly to emphasize the latter part of this remark, *within a dozen sorts*; yes, and within *half a dozen* sorts would have been yet more wisely said. There is no error more common, especially among orchard planters, than that of planting too many sorts. Why plant trees whose fruit will bring but ten shillings per barrel, when there are other sorts equally as productive, healthy and vigorous whose fruit will bring fifteen, eighteen and twenty shillings per barrel? A survey of sorts and prices will show at once that in planting an orchard with an eye to the European market it would be very unwise to plant Greenings or Swaars, which will bring only nine to fourteen shillings per barrel. If the soil and aspect be favorable to the production of Ribston Pippins this variety should be one of the half dozen, for the tree is very hardy healthy and vigorous, an early and abundant bearer, the fruit uniform in size, free from blemishes, always in demand in the English market, and bringing, as we have seen, from fourteen to thirty shillings sterling per barrel, which is about equivalent to the handsome figure of from three dollars and a half to seven dollars and a half per barrel. This variety in the climate of the County of Lincoln ripens in advance of the winter sorts, and therefore in such places should be harvested earlier and sent forward by steamer.

Another of our half dozen sorts is the Golden Russet, which is also a very hardy, healthy and vigorous tree, comes soon into bearing, yields large crops of very uniform, medium sized apples, and sell now in the Liverpool market for from sixteen to twenty-three shillings sterling per barrel. The third sort is the Pomme Grise, which is also hardy and productive, the fruit being never very large, but of a very even size. It may be of value to some of our intending planters if we pause just here to say that large apples are not as highly esteemed in the English market as small. The contrary seems to be the rule in many of the markets on this continent. Mr. Cochrane remarks in his apple circular of October ninth, "small, handsome fruit is preferred to

large, and meets the want of a better class of buyers." Speaking of Pomme Grise, we usually rank this variety as a small apple, yet it brings from eighteen to twenty shillings sterling per barrel in the Liverpool markets, while the King of Tompkins, which is three or four times the size of the Pomme Grise, brings only from twelve to seventeen shillings.

The fourth sort in our half dozen would be the Baldwin were we planting in those parts of the Province where that variety does well, for although it brings only from eleven to fifteen shillings per barrel, yet such is the universal popularity of this variety in the world's markets, and such the great productiveness of the tree, that it is nevertheless a very profitable variety. Mr. Cochrane in his circular of the eighth and sixteenth of October calls the attention of shippers to the fact that in their anxiety to send their winter fruit forward they have picked their Baldwins too early, in consequence of which they have lacked color, which has had an injurious effect upon the price obtained for them.

Could we grow the Fameuse or Snow Apple free from those black spots which so mar the appearance and quality of the fruit, we should take that for our fifth variety, for the tree is hardy, vigorous and productive, and the fruit sells readily at from fifteen to seventeen shillings per barrel; but alas, we can not rely upon securing fair fruit, nay, it is often so badly spotted as to be worthless. If there be places where it can be grown free from blemish, there it will be well worthy of the planter's attention.

Very probably some of our readers have been wondering why we have not enumerated the Newtown Pippin in our list of varieties long before this, seeing that it commands such a high price, from twenty-five to thirty-five shillings, or from six dollars and a quarter to eight dollars and three quarters per barrel. It is because, like the Snow Apple, it can not be depended upon to yield fair fruit, but that on the contrary the fruit may be so badly spotted as to be worthless. If there be any place in Canada where it can be grown free from blemish year after year, there it should stand at the head of the list of the half dozen. But the region where this variety can be grown without spotting is very circumscribed. In all the State of New York there is but a very small territory on the bank of the Hudson River, near Poughkeepsie, where it can be successfully grown, and no place has

yet been found in all the Western States where it is to be depended upon. Hence there is not likely ever to be a very large supply, and prices of this variety will always rule high. The truth is we are at a loss which varieties to take for our fifth and sixth. The Northern Spy will be chosen by some. It is an excellent apple, and is now selling in Liverpool at from eleven to fourteen and sixpence. But it is a long time in coming into bearing, and the skin is so very delicate that it needs extra care in handling lest it become bruised, and have a battered appearance when the barrels are opened.

Some will name the King of Tompkins County, but the fruit of this variety is so large that it does not meet the wants of the best class of buyers in England, and because of its size is very apt to drop or be blown off the tree, so that a large part of the crop is often unfit for shipping. Perhaps the Wagner, which brings from fourteen to seventeen shillings per barrel, would be a good sort to place as fifth in the list. The tree is very healthy and vigorous, bears young and abundantly; and yet after all would it not be as well to plant a few more of the Golden Russet and so fill up the orchard as to multiply the kinds?

The writer in the *St. Catharines Journal* also says that "the greatest care and cleanliness should be exercised in packing and shipment, so that the fruit will reach its destination in good condition." These are words we would commend to the most careful consideration of every shipper of fruit. In no point do our shippers need reformation more than in the selection and packing of their fruit for market. Hear what Mr. Cochrane says: "Thousands of barrels have been shipped to this market of a quality that should never have been sent. If shippers had forwarded half the quantity and confined themselves to the finest fruit, the result would have been more satisfactory. An opinion seems to prevail that anything will sell in this country; this is true in a sense, but the results must be woefully disappointing to shippers." It pays to exercise the utmost care—care that to men used to the rough and ready style so common amongst us seems like a waste of time. It will pay to examine each apple carefully, and if any blemish be found, any imperfection, any appearance of a worm within or any mark of a worm without, to reject it. It will pay to wrap each apple found to be perfect in one or two wrappings of tissue paper, or other thin soft paper. It will pay to put each apple when so wrapped carefully into the barrel by hand and pack them in one by

one snugly and securely. It will pay to put a few folds of soft paper in each end of the barrel and press the contents carefully but firmly together, so that not an apple can move, no matter how the barrel is shaken about. It will pay to neatly line the inside of the barrel as it is being filled up with some thin nicely tinted paper. And when the head has been put in and all firmly secured, it will pay to have a trade mark of your own with which you brand each barrel of fruit thus put up. Does some one say, "Nonsense, this will cost you too much in time and fussing." Let us see. Take the Baldwins; put up in rough and ready style they will bring eleven shillings; put up in this careful way they will bring fifteen shillings, which is one dollar more per barrel. This will pay for a whole day's work. Surely a man can put up more than one barrel in the most careful manner in a day. And it costs no more for the barrel and the transportation when put up in this way than when put up hastily. Now try this on a barrel of Ribston Pippins. Still quoting from Mr. Cochrane's circular, we find that a barrel of the rough and ready sort sells for fourteen shillings, but put up with care brings thirty shillings, a difference of sixteen shillings or four dollars per barrel. Will not that pay? Or is that difference perhaps exceptional? Let us try the Golden Russets and see whether a difference of seven shillings per barrel, say a dollar and seventy-five cents per barrel, will not pay.

But perhaps some one will say, "ah yes, this is all very well on paper, but if I select my apples in this way, when I have rejected every defective apple and every wormy apple I will have but a few barrels of perfect fruit, and the great bulk will be left on my hands wholly unsaleable; oh no, this will never do, I must make the good apples sell the poor." Let us look at this, and bring it to the test of figures. Say you would have one hundred barrels of Golden Russets if put up in the rough and ready style; these would bring you sixteen hundred shillings in Liverpool. We believe the cost of shipping apples to Liverpool averages five shillings sterling per barrel. The cost of transportation then of the hundred barrels would be five hundred shillings, which would leave the shipper eleven hundred shillings for his hundred barrels. Say that by this process of careful selection the quantity is reduced to sixty barrels. These would bring, according to Mr. Cochrane's quotations, thirteen hundred and eighty shillings. Deduct five shillings per barrel for freight, three hundred

shillings, and you have ten hundred and eighty shillings for the sixty barrels. But you have saved the purchase of forty packing barrels at not less than one shilling sterling per barrel. Or if you have purchased them you can sell them at home for the shilling sterling apiece. Now add this forty shillings which you get for your unused barrels to the ten hundred and eighty shillings, and you have eleven hundred and twenty shillings for your sixty barrels, whereas you only realized eleven hundred shillings for your hundred barrels. But the forty barrels that you have left are not wholly without value. The drying machines will allow you fifteen cents per bushel for them at the very least, which is fifteen dollars, or sixty shillings more—enough to pay for all the extra labor of selection and care of packing.

But much can be done by proper attention to the orchard to lessen the number of defective specimens. By judicious pruning, by thinning the fruit, by destroying the insects, the number of defective specimens and wormy apples can be very materially reduced. The time is upon us when the man who gives his time and study to the production of first class fruit, and ships only such to market, will reap a rich reward for all his care and painstaking.

There is another matter that the *St. Catharines Journal* mentions that is well worthy of attention on the part of fruit growers. It is this: The growers fail to realize the value of their fruit because it is made to pass through so many hands before it reaches the consumer, each one of whom must have his profits. The grower usually sells to the apple buyer who goes around buying up the surplus fruit. He ships it to Montreal, where it is bought by the European shipper, who consigns it to a shipper in Liverpool, London or Glasgow. The *Journal* suggests that the fruit growers combine and send a trusty agent to England or elsewhere, and make arrangements for direct shipments from the producer to the wholesale dealer in the foreign market, and thus save a large part of the profits of these middlemen. The apple growers in each township could easily combine for this purpose, and by a little effort this combination could be extended over the county. By a contribution from each in proportion to the quantity each shipped, a fund could be raised to defray all the expenses incident to the business. While thus united for a common purpose, each grower would have his own brand whereby his fruit would be known, and each receive what his own fruit brought. We believe that the fruit

growers about Grimsby have entered into some such arrangement. We trust that some of our readers there will give us an account of its working, and how far it has proved to be profitable to the producer.

The *St. Catharines Journal* further suggests that the Fruit Growers' Association of Ontario should add to its deliberations such questions as "How fruit can be packed to advantage? The best varieties for shipment to foreign countries? How to secure permanent markets? If our readers are not aware that such questions have been very thoroughly discussed at the meetings of the Association, we desire to refer them to the Report for 1875, p. 71 to 80. These are, however, very important questions which will be frequently recurring, and which will need to be discussed often in the light of later experience and further developments of the traffic.

An apology is due to our readers for taking up so much space with the discussion of this subject. Our apology is its importance. It is very discouraging when one has grown fruit for market to find that market not remunerative. If we have been able at this time to show why that market may not have proved to be remunerative, or have given such reasons for more care in the growing, selecting and marketing of fruit that any shall be induced to put our suggestions to the test of thorough trial, we are confident that such will, when the results come to be realized, not feel that too much space has been given to this matter. There is abundant room for first-class fruit, put up in first-class style; such fruit will always command remunerative prices. It is high time Canadian fruit growers dropped the old slipshod style, and earned⁴ for themselves, what they can easily do, the reputation of sending to market the best fruit only, and thereby reaping the pecuniary reward that is sure to follow.

THE POCKLINGTON GRAPE.

An exceedingly modest man from Washington County, a novice in grape culture, exhibited a beautiful white seedling grape year after year at our Rochester fairs, held usually about Sept. 15th. The cluster and berries were exceedingly large and fine, and the grape was a native beyond question; yet year after year this man returned to his home without finding, among all the shrewd, observing and enterprising nurserymen in the city of flowers and vines, any one to take an interest in it far enough to propagate it. The quality is too poor, said the wise ones, with smirk and sputter. True, it was then little better than the Concord in quality, but it was not

taken into account that it had been grown in a section of the State where the seasons are much later than at Rochester, and not suited to bringing out the quality of a grape on the 15th of September. At the third and last trial a propagator was found who condescended to adopt the foundling, when, behold, in its new home it was much better in quality than before, and ripened quite early withal.

I saw the Pocklington repeatedly, growing at Rochester. It was eatable Sept. 1st; was in its glory Sept. 15th; was still good Oct. 1st, when it had assumed a rich amber hue. While not the best, in any one's opinion, it is a grape the offering of which will give no offense to the most critical authority in the country. It is hardy, healthy, vigorous and productive—a grape that will succeed with the Concord, I should judge from what I have seen, yet time may bring out some weak point that has not thus far been made manifest.

Monroe County, N. Y.

CHARLES A. GREEN.

We clip above from the *Country Gentleman*.

[Guess you don't know, friend Green, all about the modesty (?) of that "extremely modest" man. When a man wants *thousands of dollars* for a little stock of a new seedling grape, in these times of a multiplicity of new sorts and the rapid way of multiplying them, and the easy conscience of some growers to advertise such new kinds and put in something else for them, we don't wonder that "among all the shrewd, observing and enterprising nurserymen" not one could be found to take hold of it. It is undoubtedly a splendid grape, but the man who paid that "extremely modest" man the price *he asked us*, will never get his money out of it, and we pity him—that's all.]—*Purdy's Fruit Recorder*.

TREES AND PLANTS RECEIVED FROM THE FRUIT GROWER'S ASSOCIATION.

BY A. BRIDGE, WEST BROOK, FRONTENAC, ONT.

The raspberry bush received this year from the Association has made a good growth. Last year I received a one year old tree and scion of the Ontario apple by mail. The tree is growing fine; the scion I grafted on a natural tree, which is also growing. The raspberry received the year previous is too tender for this climate. Last winter was a very mild one, but every one winter killed. I did not give them any winter protection. My Burnet Grape vine bore fruit this year; the fruit I consider the very best; I was afraid they would not ripen, but they ripened a month before the frost came. All fruits ripened this year earlier than usual, on account of the long drouth in the latter part of the season. I have two varieties of common wine grape, (Chippawa and Caroline,) that ripen every year in August; this year they were ripe on the 10th August, and on the 20th they were

all ripe and ready to gather. The Downing Gooseberry is a success here; it has borne a heavy crop every year since it has been planted, without mildew. I have several bushes now from the one received from the Fruit Grower's Association, which have all borne heavy crops yearly. My Flemish Beauty Pear tree is very fine, has never had a limb winter killed; it bore some fruit this year for the first. My Clapp's Favorite is a beauty, has not winter killed any for four years, has not borne any fruit yet, but is now filled with fruit spurs for fruit next season. My Grimes' Golden Pippin apple tree is growing fine, bore a little fruit this year for the first. My Swayzie Pomme Grise apple tree is doing well, not borne any fruit yet. The Salem Grape is the only thing that I ever received from the Association that did not grow.

A NEW METHOD OF PREPARING POTATOES FOR FOREIGN MARKETS.

The following article is being very extensively circulated by the agricultural journals. We trust that some of our readers may be able to throw more light upon this subject. Many thousands, if not millions, of bushels of potatoes are grown in Canada, of excellent quality, and there is no reason why the California preserved potatoes should be any better than Canada preserved potatoes.

The San Francisco *Commercial Herald* says that during the past year or two an important industry has sprung up in that State in the way of preserving potatoes for a foreign market. A machine has been invented for pressing and preserving potatoes in such a manner that they may be dried and kept for a number of years in any climate. No oxidization or fermentation takes place in the process; they retain, to a great extent, their natural taste and original freshness. Shippings made to England during the past year have attracted attention, and the demand for California preserved potatoes in that country already exceeds the supply. The first shipment to Liverpool brought the sum of \$100 per ton over all expense of shipment. Last year about twenty tons were shipped from San Francisco, which brought forty-five English shillings per hundred weight, or at the rate of \$3 per sack for green potatoes. At Arcata, Humboldt County, a strong company has been organized to preserve potatoes by the new process. Ventura has an apparatus in working order, and will handle a large quantity of potatoes this fall. San Francisco merchants and capitalists evince a lively interest in the enterprise, and are watching results closely. The testimony of English merchants is to the effect that the products are superior and in active demand.

THE WHITE FRINGE TREE.

This excellent shrub is considered a tree by many. Twenty years old, and planted singly where it has room to develop, it becomes as much a tree as the ash, to which, indeed, it is related. Grouped in masses with other shrubs or plants of its own kind it assumes the habit of a bush. Singly, also, it looks like a bush during its earlier days, being of slow growth and given to rounded forms. Related to the tree-like ash on the one side, it is as nearly allied, on the other, to the shrub-like lilacs, forsythias and privets.

The white fringe, though not exactly rare, is thoroughly choice in every way. There is not a quality about it from the crown of its head to the sole of its foot that is not rich or very good. The bark of the trunk or stem is smooth and light colored, and the leaves good sized and shining—quite as interesting as those of the lilac, which is saying a good deal. Even the twigs group themselves in picturesque fashion. But the “crown of its head” bears its richest endowment after all. Its flowers are indeed unique. There is nothing at all like them in the great variety of inflorescence displayed by a large list of lawn plants. They make up wreaths, and clouds, and piles of lace, snow-white and dazzling. Plucked from the bush they are nothing; crowning the bush they are exquisite.

We recall a specimen that stands on the border of a walk near a picturesque bit of rock-work, with green turf, and great Norway spruces in the background. It would be impossible to describe the charming effect this crown of white fringe produces in such a setting. Looking down the vista and beyond, one could almost fancy for a moment that he saw a mass of cirrus clouds floating near the earth. It is worthy of the most distinguished position, not too near the house or other prominent objects, but out on the farther side of a bay of greensward near a background of contrasting dark evergreens.

Plants of the *Chionanthus* are readily raised from seed, but are very slow in growing to any size. Perhaps the best plan is to graft wood of the *Chionanthus Virginica*, or white fringe on the common ash. What do you think of a strong, straight stem of ash crowned by a great mass of white fringe flowers. The very vigor of the stock as well as the effect of grafting will throw the buds of the graft quickly into flower, and tend to sustain a healthy, rapid growth thereafter.

The habit of the white fringe is so regular and rounded that it scarcely ever needs pruning, unless some part of it happens to break or become diseased. If you must prune, prune in winter or early spring. The *Chionanthus* is a plant that likes good soil and repays good feeding by extra growth and beauty; but forced to occupy spots of moderate fertility and even bleakness, it will do quite as well as most other deciduous shrubs.

There are few shrubs that appear well in so many different places. But the slow growth of the white fringe while young, and its ultimate magnitude of age, fit it alike for the small door-yard or extended lawn, while its unique and beautiful foliage as well as flowers make it distinguished in the choicest assemblage of trees and shrubs.—*Rural New Yorker*.

QUESTION DRAWER.

An esteemed member from Barrie, Ont., writes :—

When my lawn was laid down last fall it was by mistake sown with orchard grass, and as such grass will never produce a velvety sward, I wish to kill it. Will a deep ploughing of it this fall, leaving it rough till spring, be sufficient? or if you consider this will not be enough, please be so good as to tell me the best way to manage.

It will be more likely to kill it if plowed deep and harrowed so as completely to bury it, and not allow any of it to get a chance to start. We have found that grass sod is more sure to rot and die if plowed about the middle of August.

I wish to plant a few pear trees in a sheltered garden with southern aspect, gravelly soil, moderately damp subsoil, and immediately fronting a sheet of water, and tolerably free from late and early frosts. I want to know the names of such tender varieties of the very best kinds that might be grown under such favorable circumstances so far north.

It is impossible without some experiment made at Barrie under similar conditions to speak with confidence to this question. The following varieties are of the very best quality, sufficiently hardy to thrive in the County of Lincoln, namely: Tyson, Beurre Bose, Beurre Hardy, Seckel, Sheldon, Beurre d'Anjou and Doyenne Boussock, and might all or some of them be found to do well. We suggest that our correspondent give them a trial, and report results through the pages of the CANADIAN HORTICULTURIST for the information of others. His experiment will be worth a thousand guesses.

Why will not common Ivy live out of doors here the year round as it does in Montreal?

Is the Ivy intended by the term "common Ivy" the English Ivy? Canadians and Americans apply that term to a native creeper, *Ampelopsis quinquefolia*, which is quite hardy, and should thrive without any trouble at Barrie. If the English Ivy is intended, we can only state that we were not aware that it did live out of doors at Montreal, and very much doubt whether it will survive there a single winter above the snow line. Below the snow line at Montreal it will be safe all the winter, for the reason that the snow remains. Possibly (our correspondent will know if it be so) at Barrie the snow melts at times during the winter, leaving the Ivy exposed for some days to severe freezing; if not, then the English Ivy should be able to live below the snow line at Barrie also.

Stephen Cadham, of London East, Ontario, writes :

Would some one advise me as to what fruits would best succeed in the district of Algoma, near Sault Ste Marie, Ont.? Is it probable that grapes will grow there in open air? If so, what kinds, as I have purchased land there, and intend to plant. I have received the *Canadian Horticulturist* about eight months, and am well pleased with it.

CARING FOR AN APPLE ORCHARD.

Mr. J. S. Woodward, a correspondent of the *N. Y. Tribune*, gives the following method of treating an apple orchard: My apple orchard covers thirty-two acres of ground, and in addition to making it a run for some thirty hogs, I have during the past two years kept from 150 to 200 sheep and lambs in it during the summer. I have just bought the sheep, (May 21st,) and turned them in for this season. Of course that amount of land, if it was in good seeding and free from trees, would not pasture so much stock; but in addition to the pasture, I feed enough grain and wheat bran to keep them in such condition that the lambs shall be large enough to wean in July, and the sheep sufficiently thrifty to at once accept the buck after weaning the lambs, and thus drop their next lambs for early winter feeding next winter.

This, I find, costs me less than to hire the same number pastured by the week, and being crowded they eat every spear of grass, every weed and green thing close down, and eat every fallen apple as soon as dropped; for the latter purpose I find sheep much better than hogs, for while the hogs sleep so soundly as not to hear an apple drop if only a few feet away, a sheep never sleeps, so that it is on hand for every apple as soon as it touches the ground.

I let them run here until time to gather winter fruit, and although they will eat a few apples and a few twigs from the ends of the lower limbs as they bend down with the load of fruit, I find my fruit each year growing fairer and fairer, with less and less wormy apples, and my trees, manured with the feeding of so much grain, are looking remarkably healthy and are productive. To prevent their knawing the smaller trees I wash the trunks with a solution of soapsuds, whale oil soap and sheep manure about once each month; and besides, I give the sheep a constant and full supply of fresh water. This is very important, for in hot weather they get very thirsty and will eat the bark from larger trees even, unless they have plenty of water.

I like this manner of treating my orchard very much. What it would cost me to hire the sheep pastured each week will buy at least 600 pounds of bran and 400 pounds of corn, making an aggregate each summer of over ten tons of the very best kind of fertilizer for an orchard. For the money I pay for feed I get my sheep kept in finest condition, have the lambs growing finely all summer, and have the whole amount of feed bought (which is worth all it cost for that purpose,) scattered about the orchard in the best possible condition and manner. Thus, you see, I prove that it is perfectly practicable to "eat my cake and have it too," or in other words, to get twice value for the money invested, besides having the codling moth successfully trapped.

The Canadian Horticulturist.

VOL. III.]

DECEMBER, 1880.

[No. 12,

THE ANNUAL DISTRIBUTION OF PLANTS.

A recent meeting of the Executive Committee, the subject of the distribution of trees and plants to the members of the Association, was fully discussed, and the various difficulties and complaints fully and carefully considered. One of the serious causes of complaint was the fact that the persons to whom the trees were consigned did not understand how to take care of them, hence before they came into the hands of the persons for whom they were intended, they often became dry and worthless. Another was the inconvenience of going to the person to whom they were consigned in order to obtain them. Besides, it was found to entail a very heavy expense upon the Fruit Growers' Association in the packing and freight. In order therefore to obviate these difficulties, the committee decided, for the present at least, to send out nothing that could not be sent direct to each member by mail.

To meet as far as possible a desire that had frequently been expressed on the part of members to have the privilege of choosing the article to be received, the Executive Committee decided to place four varieties before the members, giving to them the privilege of designating which of them they wish to have sent, by informing the Secretary on or before the first day of March, 1881. If no notice is received by the Secretary on or before that day, the grape vine named in the list of articles from which selections may be made will be sent. Attention is particularly called to the date mentioned, because it is of the greatest importance that the Secretary be informed by that day what is to be sent to each member, so that he may have time to perfect the necessary arrangements before the season for distribution arrives. Those who send in their annual fee after the first day of March will receive the grape vine.

The articles selected by the committee are the following :

THE SENASQUA GRAPE ; to be sent whenever a different choice is not communicated to the Secretary so as to reach him on or before the first day of March next.

THE DEMPSEY POTATO. Two pounds of this valuable new potato, a full description of which will be given in a future number.

THE HYDRANGEA PANICULATA, a new, hardy and handsome flowering shrub, worthy of a place in every lawn.

THE WEALTHY APPLE. A one year old tree of this excellent winter apple. The regulations of the Post Office Department do not admit of a larger tree being sent, but members who are anxious to fruit it early can cut back the top and graft it into a bearing tree, thereby obtaining fruit in a very short time.

The object which the Association has in making an annual distribution of this kind is to secure from the members an expression of their opinion as to the value of the plant or tree for cultivation in their several localities, after having carefully tried it. Not only is the quality of the fruit to be considered, in the case of fruit trees or vines, but also the qualities of the tree, its productiveness, hardiness and healthfulness. If a vegetable, its value for food, its productiveness, adaptation to soil and climate, and profitable culture. Of a flowering shrub or other ornamental plant or tree, whether it will endure the winter without injury, and really make an attractive and pleasing feature on the lawn or in the flower garden. The Executive Committee earnestly request that the members will please to bear this in mind, and not forget to give this much needed information every year.

This distributed article is not intended as a return for the dollar, (annual fee,) but as being intrusted to your care, that you may give to others the benefit of your opinion in regard thereto.

The Directors would further be much gratified if members, and especially the ladies who are members of the Association, would, on sending in their fee for 1881, mention to the Secretary what article they would like to have sent them for trial in the spring of 1882. This might enable them to send those things which you desire particularly to try in your locality, and in the trial of which you would take a special interest, and concerning which it would be a pleasure to report results.

TO MEMBERS OF THE FRUIT GROWER'S ASSOCIATION.

The present number concludes another year of the *Canadian Horticulturist*. It is hoped that you have found it to be of some benefit to you, that it has kept you informed of the progress of horticulture, has brought to your notice the important recent introductions in fruits and flowers, and helped to extend your acquaintance with such trees and plants as promise to be valuable in our climate.

The Directors desire to issue a sufficient edition of this monthly to meet the requirements of members, and to enable them to do so, they most earnestly request that you would renew your subscription by the first of January, 1881. If the members would only be punctual to do this, the Directors could form a very accurate estimate of the edition required, and be able to bring the cost of publication to the smallest possible limit. Will you not help them to do so by sending in your annual fee promptly on receipt of this number?

Members are also requested to write more freely for their journal, and through it give to each other the benefit of their experience and opinions. We hope to have from our botanical members some papers on botany, and particularly upon Canadian flora; from our farmers their experience with their orchards; from our gardeners the results of their trials of new potatoes, peas, and other vegetables; from our amateurs some information concerning their specialties or hobbies, and from the ladies some inquiries at least concerning flowers and flowering plants. Please to bear this in mind, and help to make our *Horticulturist* an exponent of Canadian thought and experience on all horticultural matters.

CULTIVATION OF SORGUM AT OTTAWA.

BY P. E. BUCKE, OTTAWA.

It will be remembered that attention was called to the cultivation of Sorghum in the January and February numbers of the HORTICULTURIST of the present year, as the future sugar plant of the Dominion, as well as the Western States. The Hon. G. W. LeDuc, Commissioner at Washington, D. C., kindly sent me two packages of seed known as

the Early Amber sugar cane, some of which I planted myself, and the rest distributed among those who cared to have it. I planted the seed on the 18th May, and by the 30th September the plant had fully matured, and its seed was fully ripe,—showing conclusively that our season was ample for the maturity of the plant. My land was light sandy soil, and consequently would bring the crop to perfection earlier than if grown on clay. The ground on which it was raised was by no means rich, but the plant attained a height of eleven feet, and the tassels at the top were well filled with seed. For the first six weeks its growth was very slow, but when the hot weather fairly set in it went ahead in a very rapid manner. I much regret I had no means of expressing the juice; but my first consideration was to ascertain that the Early Amber cane would reach perfection in this vicinity, and I believe this fact has now been fully established.

From reports in the press in various parts of the Province it is noticed that the growing of *Sorgum* is becoming quite a Canadian industry. Many farmers are abandoning the maple syrup and sugar manufacture and adopting the less tedious mode of obtaining saccharine matter from the Early Amber cane. Already prizes are being given at the agricultural shows for *Sorgum* products, and it would be well if the Hon. Mr. Wood could see his way to change the offer of a grant of \$25,000 and an annual amount for ten years of \$7,000 per annum made by an Act passed in 1873, for producing sugar from beets, to the same grant, and the same bonus per annum for *Sorgum* sugar. It is found from practical experience in the neighboring States that *Sorgum* is much easier cultivated, is a surer crop, more easily harvested, and the methods of making syrup and sugar are much simpler than from beets, the chemical manipulation of which forms an almost insuperable barrier to the production of sugar at sufficiently cheap rates to make it pay. The cost of the necessary machinery is also very heavy. From a study of the subject, I cannot but think that any attempt made in the manufacture of sugar from beets, which I see agitated in the neighboring Province of Quebec, must, like those made in various parts of the States, lead eventually to disaster. A cheap stationary or a portable steam crusher, which like the thrashing machine can be conveyed from farm to farm, will be the next thing in order. The sugaring apparatus is more expensive, and will probably require a company with a considerable capital to erect and work it.

HORTICULTURAL GOSSIP. XII.

BY L. WOOLVERTON, GRIMSBY.

SHORTENING IN PEACH TREES.—“What are you doing to your peach trees?” said Ignorans, watching me with my pruning shears lopping off the ends of the branches. I am shortening them in. I find it a very useful mode of pruning peach trees. “I can’t see much use in it.” Well, I will tell you what use I find in it. (1) It increases the vigor of the tree, and makes it less liable to the yellows. (2) It thins the fruit of the coming season, and thus insures a yearly crop, providing the winters are favorable. (3) It prevents the breaking down of the trees either with fruit or with ice. You see yonder block of trees carefully shortened in last March. Now the result has been very marked, for while many orchards about here this year have been dreadfully mutilated with the tremendous weight of fruit, and will need a year or two to regain their vigor, that orchard is uninjured. It has borne large, handsome fruit, and is fit for similar service next season.

Ignavus said, “Well, it may be very useful, but, pshaw! it is too much trouble. It will take half one man’s time to cut them that way. I had rather let them grow as they choose.”

“When is the best time to prune peach trees?” said Prudens, “I want to try the system.” I think in September, immediately after the fruit is picked. The wounds will heal nicely before winter, and the remaining buds will mature better for the thinning. Failing in September, I would do it in early spring, just before the new growth begins.

“Would you shorten in the old wood?” No, not as a rule. I would only cut off from one half to two thirds of the last growth in cases of vigorous trees. But I would cut back the old wood in cases of old trees where the limbs are straggling or stunted.

PICKING AND PACKING PEACHES.—As Ignavus and Ignorans walked away quite satisfied with their old way of letting things take care of themselves, Prudens further enquired, “How do you gather your fruit in such a large orchard?” My plan is to supply the pickers with plenty of handle baskets. These they fill and set down by the carriage roads which intersect the orchard at convenient distances. A boy

with a horse and wagon keeps busy bringing these to the packing house and taking out empty baskets.

"How do you pack?" Well, we have packing benches about as high as a table, and so inclined that peaches will easily roll down. The packers empty the baskets upon these benches, and after picking out all soft and decayed peaches into one basket and all small ones into another, the rest are then allowed to run off into a third basket. As fast as filled they are passed over to the sewing tables, where they are covered with gauze and ticketed. The small size are marked with a figure 2, any very choice are marked "Select." They are then ready for drawing away to the express depot.

"And how do you sell the fruit?" My plan is to consign it to some first-class commission house. I know many large growers distribute their own fruit, and perhaps it pays best, but it is a great deal of trouble. I am sure I find more than enough to do in overseeing the picking, packing and shipping without also adding the great toil and anxiety of making sales and collecting accounts.

Prudens said little, but I could see he did not fall in with my way. Commission men in his opinion too often take advantage of you, or neglect your goods until they have sold their own. He prefers to sell them himself and know what he is getting for each lot. But I think that he will change his mind somewhat if he ever becomes a very extensive grower.

MANURE FOR ORCHARDS.—There is one thing which Ignorans does that surprises me. Whenever an old horse dies he pitches it into the lake or buries it in the earth. It puts me in mind of the way the Lower Canadian French farmers used to do. When the manure piles got so large about their stables that they could not get in or out, they would make a bee to pitch them into the river. Ignorans might as well bury twenty dollars in gold where it would be of no use to any one. I am sure the old carcass would be worth that much to his orchard if he would use it rightly. I have seen it stated that a dead horse will convert twenty tons of peat into valuable manure, and I believe it is true. I tried a similar plan once and was much gratified with the result. I left the heap over the carcass for a few months, and then turned it up together. When I applied it to the trees I was astonished to see the effect. The growth made was simply marvellous,

and I determined that I would henceforth never bury a dead horse except in a manure pile.

The mud of our ditches, too, is very serviceable. Mixed with one-third its amount of ashes and applied to our trees it is most excellent. Every means should be brought into service to increase the quantity of manure for our orchards, and such kinds as I have mentioned are better for them than barnyard manure. One very valuable ingredient of the manure heap is entirely lost by most of our farmers. I refer to the urine of our stables. It is allowed to run away, or evaporate injuriously to the eyes of our horses, which are confined in the close stables through the winter. A few loads of sawdust in a convenient corner will last a whole winter as an absorbent. After cleaning the stable floor let a shovelful of dry sawdust be scattered over it. An immediate effect will be observed in the purification of the air, and a most valuable ingredient for the manure heap will thereby be saved from waste.

THE JANESVILLE GRAPE.

Our attention is called to this grape by Mr. Frederick Farucombe, Newcastle, Ont., who expresses surprise that we did not mention it in our article on "Early Grapes." He states that for several years he, as well as other gentlemen in that neighborhood, have grown the Janesville Grape, and find it from a fortnight to three weeks earlier than the Concord, and that this year they were ripe the first week in September, and the Concords were not ripe before the first week in October. The Janesville is considered by our correspondent to be quite equal if not superior in flavor to the Concord, and more hardy and more prolific. The berries are larger than those of the Clinton, he finds, but smaller than those of the Concord; but the bunches are more compact than the Concord bunches, and greatly resemble the Clinton in that respect. The vine, he adds, is a free grower, ripening its wood well, and requiring no protection whatever in the climate of Newcastle.

Perhaps other members of the Association have planted the Janesville Grape, who will favor us with the result of their experience with it and their opinion of its merits.

HOW CAN OUR FRUIT EXHIBITIONS BE IMPROVED ?

BY A. HOOD, BARRIE, ONT.

Having paid a visit to the Provincial Exhibition and inspected the very fine show of fruit with which its tables were filled, it occurred to me that improvements might be made in the plan of giving prizes and arranging specimens for exhibition. What I object to under the present system is that specimens of any of the principal kinds are to be found in all parts of the hall, so that any one wishing to compare those grown in different localities, to ascertain in what part of the Province that particular kind flourishes best, will have a very tedious time of it before he has found all the exhibits, and travelled backwards and forwards to make comparisons. This arises from the number of sections in which any one variety may be shown, and the manner in which fruits from all sections are mixed up together. For instance, take any popular apple that may be good for cooking and also for dessert, and I find on inspecting the prize list that it may be shown in a number of sections, with three or four prizes in each, making thirty different lots of the same apple, each of which takes a prize, and each lot has five specimens, making in all one hundred and fifty prize apples. And if there are, as there may be, two or three times as many more which fail to take prizes, that would make from three hundred to six hundred apples all of one kind, and these are to be found in all parts of the hall according to the section in which they appear. This is what may take place, and what does take place with one leading variety only; supposing then there are from ten to twenty leading varieties, all multiplied in the same manner, and a still larger number of varieties of secondary merit, each appearing in several classes or sections, and some idea may be formed of the bewildering character of our fruit exhibitions.

Surely the system which causes this continual repetition of the same varieties, frequently from the same localities, and often from the same orchard, cannot be the best on which our fruits can be exhibited, either as regards the benefits to be derived by those who inspect them with a view of obtaining a knowledge of our fruit products, or in consideration of the interests of exhibitors. If ten specimens have to be examined where one would suffice, a loss of time

is occasioned to both spectators and judges, and additional trouble and expense to exhibitors.

Let a first, second, third, and in some cases a fourth prize be offered for so many specimens of each desirable variety. Commence then at one end of the table with all the competing specimens of the earliest fruit, and then the same with the second earliest, and so on to the latest. And let there be no grouping of the four best cooking, and the six best cooking, and the ten best cooking, which must in any case only be a repetition of what has been seen in the one variety class, with the disadvantage that inferior specimens frequently take prizes because shown "in group" with extraordinary fine specimens of other kinds. This plan may have its faults, as indeed what plan has not? but it certainly has the merit of simplicity.

The object of our exhibitions should be, and I hope is, to encourage the growth of the best fruits, &c., which our soil and climate are capable of producing; and the manufacture of the best and most useful articles that our manufacturers can supply; but as regards the products of the soil, whether they take the shape of fruit, grain or live stock, it does not follow because the absolutely best cannot be produced that the best should not be striven for and encouraged. It does not follow that because the best quality of fruit or grain cannot be grown in any particular county or district, that no fruit or grain should be grown there at all, and yet as our exhibitions are conducted the whole of the encouragement in the shape of prizes and medals goes to the favored sections, while others a little less favored by climate or soil are left out in the cold, on the principle, I suppose, that "he that hath to him shall be given." The plan of exhibition I have sketched out above is open to this objection in common with the one hitherto followed. This is one of its faults, and another which applies to all of these great exhibitions is, that a few skilled orchardists, farmers, stock breeders, &c., are stimulated and forced into a sort of hot-bed growth, and become a favored class—a sort of aristocracy among producers. But they do not carry the bone and sinew of the country with them; they outstrip the great mass of producers so far that there is really no competition, and the multitude fall back into their old grooves again. Now what I would like to see is to have the stimulus to improvement localized as much as possible—brought home as it were to our own counties and townships, and as near as possible

to our very doors, so that every producer might be interested and benefitted. This of course is the work more particularly of county and township associations, which I hope will never be supplanted by the huge gatherings that now take place in all our large cities. Impressed, therefore, with this idea, I wish to suggest a plan of localizing them to some extent even here, and I will indicate two methods by which my views could be carried out.

First, I would offer prizes to be competed for by each of the agricultural districts, and let the fruit from each district be shown separately, according to the plan above suggested. This would make thirteen different collections of fruit—thirteen distinct exhibitions—which would show the fruit growing capacity of each district in the most satisfactory manner.

Or, secondly, I would have an exhibition held in each of those agricultural districts prior to the provincial exhibition, and let the first prize fruits only be sent from each to the provincial. The same amount in prizes might be given in either case, but in the latter these prizes would be paid out by district committees, but not placed in their hands until the first prize fruit had been placed on exhibition at the provincial.

This would give a stimulus to fruit growing in every district, instead of being confined too much to more favored localities as is now the case, and the amount in prizes offered in each might be proportioned to the number of members of the Fruit Growers' Association, and this would furnish a stimulus to each district to increase its membership.

SOME NOTES ON FRUIT AND THE FRUIT GROWERS' ASSOCIATION.

BY P. E. BUCKE, OTTAWA, ONT.

In the earlier days of western Canada the first settlers had so hard a battle to reclaim the land from the forest trees, that the planting of anything larger than a cabbage never entered the head of anyone. It is true the inhospitable climate of Lower Canada had given birth to some of our present most favored apples, but beside these our Dominion was destitute of fruit, and probably we should have remained so for a much longer period, had not the nurserymen on our southern border

raised both trees and tree peddlers, who brought their wares to this then *terra incognita*, know as Upper Canada. I would here add, though some have made game in prose and verse of that ubiquitous specimen of the *genus homo* known in the vulgar tongue as the "tree pedler," he has not always been an unmixed evil; and though some harm has been done by the selling of "Barm of Gilliad" poplars for pear trees, and the like, yet the introduction by them of fruit trees and vines in early years demonstrated the fact that our climate was specially adapted for horticultural pursuits. The cumulative force which such knowledge begets in a new country is perfectly astonishing. Year by year nurserymen were multiplied, and the rapidity with which large and small orchards and vineyards have sprung into existence in every section is quite gratifying to the lovers of fruit. There is not a town or county from Nova Scotia to the head of Thunder bay that is not dotted with large or small cultivations, and some orchards produce large quantities of surplus fruit for shipment.

The Fruit Growers' Association of Ontario, which was originated some fifteen years ago by the assembling together of a few enthusiasts, now numbers its members by the hundreds; and it is hoped its monthly periodical will before long be developed into a weekly one, embracing with its present articles on fruit and forestry, designs and plans of house and farm buildings, glass houses and conservatories, designs for parks, and a register of current prices of fruit in towns and cities in Canada, the States and Great Britain. This is much required, owing to the large amount of surplus fruit grown in certain districts and the scarcity that exists in others, and also with regard to the enormous export trade which is fast developing. The subject of drying fruits should also be handled. In fact the field opened is such a large one, that if any one had the time and vigor to push the journal, it would have a large circulation in England as well as on the Continent if conducted on a business footing. The HORTICULTURIST is taken entirely by a class of people directly interested in fruit, forestry and horticulture, and it should be the medium of advertising all the articles relating thereto, such as farming and gardening implements of all kinds, rural architecture, landscape gardening, situations wanted in town and rural districts by gardeners and farm laborers, fencing materials, artificial manures, soil pumps and pipes for irrigation matters, hydraulic rams, cut flowers, plants, bulbs vines, &c. Also in

season, a list of orchards, and probable number of baskets of fruit for sale in each. This item would be very desirable for the English buyers who come here for their winter stock.

As orchards are multiplied it will be necessary to institute artificial drying machines, as this is the only legitimate method for making the apple saleable in all climates; and so great a perfection has this method reached of doing up this fruit that it is difficult after it has been cooked to tell whether the fruit was not fresh gathered in the morning for the pie which graces the dinner table. In all tropical climates where the apple cannot be grown, a great want of it is felt amongst European restaurants. No southern grown fruit has yet been found able to take its place for permanent use. The canning establishments of California are monopolizing the trade of preserved fruits with India, why should not the extensive orchards of Canada undertake to provide that country, the West Indies and South America with dried fruit, to which potatoes, &c., might be added? When west last September I saw hundreds of bushels of apples rotting on the ground. Sheep, pigs and cattle were being fed with them, and yet they could not be disposed of. Most excellent fruit was being sold at twenty-five cts. per bushel, and the price was considered a good one.

It is now time for the Association to take action in giving fruit growers a standard of fruits to cultivate for the home markets and for export out of the long list of fruits in the catalogues, amounting to hundreds of varieties. Not more than from ten to twenty are enquired after in local or foreign markets, or in those parts of the Province where they cannot be cultivated. Of grapes, peaches, plums and pears the names are hardly yet known to buyers, and of strawberries only two or three kinds are shipped to a distance. It would be a good plan if shippers would label their fruits not only with their own names and residences but also the name of the fruit; this is seldom done except with regard to apples, but I am convinced as the fruit question becomes more understood all kinds will sell better if its name is attached to the label.

The society should also issue a list of fruits most suitable for the various counties of this Province; this would be invaluable to intending planters.

The cultivation of fruits has largely increased since the formation of our society, and it is rapidly extending as only those know who

have watched this industry since its commencement. It is unfortunate that so many of the trees have died which have been sent out, though to some extent this must have been expected. Sometimes they were badly packed, at others they were delayed by the carrying companies in whose care they were entrusted. Some were received by people who did not know what to do with them, and they were thrown into woodsheds instead of having their tender rootlets immediately protected by soil. Again, some of the members had not sufficient experience to plant them properly, or they were set in an unfavorable position, so that the evils of all concerned have been heaped upon the head of the Association. For my own part, I can confidently say that everything obtained grew well, and would have flourished in a suitable climate. Not only so, but in many instances by various means of propagation, I have supplied other members whose trees have failed.

SMILAX.

The *Boston Post* gives a very interesting account of the manner in which Smilax came to float on the topmost wave of popularity for decorative purposes. A Boston florist had failed signally in his attempt to make the vine a favorite with New York florists. At the time of the great fair in aid of the French sufferers by the Franco Prussian war, Madame Doremus, who was one of the managers of the fair, obtained from the Boston florist a number of floral decorations and a supply of flowers for her flower tables, and among these was sent an abundance of Smilax. Mlle Christine Neilson tendered her services to Madame Doremus as an attendant at her flower tables, and was presented by the florist with flowers for her hair consisting of two rosebuds and a long spray of Smilax. During the evening, and while the rush for the flower tables was at its height, a well known gentleman found his way to the front, and began to examine the flowers.

"Yes, I'll buy a bouquet," he said, in answer to the prima donna's business like interrogation.

"Which one will you take?"

"I will take that one in your hair, if it is for sale," said he audaciously.

"Yes, that is for sale," said Neilson, promptly.

"What is the price?"

"One hundred and fifty dollars."

"I'll take it," said he, as promptly; and he went down into his pocket and produced three crisp fifty dollar greenbacks.

In a twinkling the prima donna snatched the two buds and the spray of Smilax from her hair and handed them to the gentleman with a graceful "thank you," to the intense delight of everybody who witnessed the transaction.

The story flew about the hall like wild fire, and in ten minutes all the demoiselles attending the tables were importuning the florist for a spray of "that Boston vine." The next day the New York florists sent for the Boston man in haste, and all were willing and anxious for some of the Boston vine. One wanted two hundred strings a day for a month; another a thousand strings a week for the season, and everybody wanted more or less. In a very short time the Boston florist had orders for an immense quantity. He lost no time in telegraphing to his partner in Boston, and in twenty four hours the firm had control of nearly every Smilax in Boston and vicinity. Large shipments were made to New York, and since that time Smilax has been a staple article with the metropolitan florists.

SUBJECTS FOR DISCUSSION AT THE NEXT MEETING.

The Executive Committee have selected the following subjects for consideration at the next meeting, which will be held in the City Hall, Hamilton, on Tuesday and Wednesday, January 18 and 19, 1881. Members are requested to prepare papers on such of these subjects, or indeed upon any other within the scope of the objects of the Association, as they choose, to be read at the meeting. The following are the subjects indicated by the Committee, viz:—

FIRST.—What new or little known varieties of apples have been introduced, and which of them promise to be of value?

SECOND.—What new or little known varieties of pears have been introduced, and do any of them give promise of being valuable in our Province?

THIRD.—The best methods of putting up the different fruits for market?

FOURTH.—The best methods of preserving fruit and vegetables by drying?

FIFTH.—What soil, and what conditions of the surface soil would best conduce to the proper development of apple trees?

SIXTH.—The best twenty-four varieties of hardy roses, including climbing, summer, hybrid perpetual and moss roses?

SEVENTH.—The best varieties of hardy climbing shrubs?

EIGHTH.—The best varieties of Clematis, and the best methods of treatment?

NINTH.—Are there any Canadian wild flowers worthy of cultivation in our gardens that have not already been introduced?

TENTH.—What varieties of sweet potatoes can be successfully grown in Ontario, and what is the best method of treatment?

ELEVENTH.—Which are the five best and most profitable varieties of potatoe?

TWELFTH.—Which are the five best varieties of table peas?

THIRTEENTH.—Can any of our native nut-bearing trees be profitably cultivated, either for the nuts or timber, and where is the northern limit of each?

SCREENS.

The common process is to go to the forest, select such young trees as seem adapted to the purpose, dig them by cutting off all the roots at a few inches distance from the trunk, thus cutting away probably nine-tenths of the entire root system; remove them from the shade and shelter of other trees, and probably transfer them to the open ground, where they, while yet enfeebled by the process, must be subjected to the full power of the summer's sun and wind. This is doubtless many times done as a matter of economy, although after such trees have died and been several times replaced with the loss of several years time, as is usually the case, there would seem to be abundant reason to doubt the wisdom and even the economy of the process.

Nursery-grown trees are usually thickly grown in the seed bed, and when but one or two years old are taken up, the roots cut back and the seedlings thickly planted in rows, where they are allowed to stand till they demand more space, when they are again transplanted, and as a necessity the roots are again shortened and they are given a wider space for growth. Trees grown in this manner are invariably found to have a dense mass of fibrous roots, and hence can be transplanted with greater certainty, and will, moreover, recover from the shock of removal with far greater promptness. Such trees are also more fully hardened by exposure to the sun—a fact which adds greatly to their ability to bear the shock of removal.

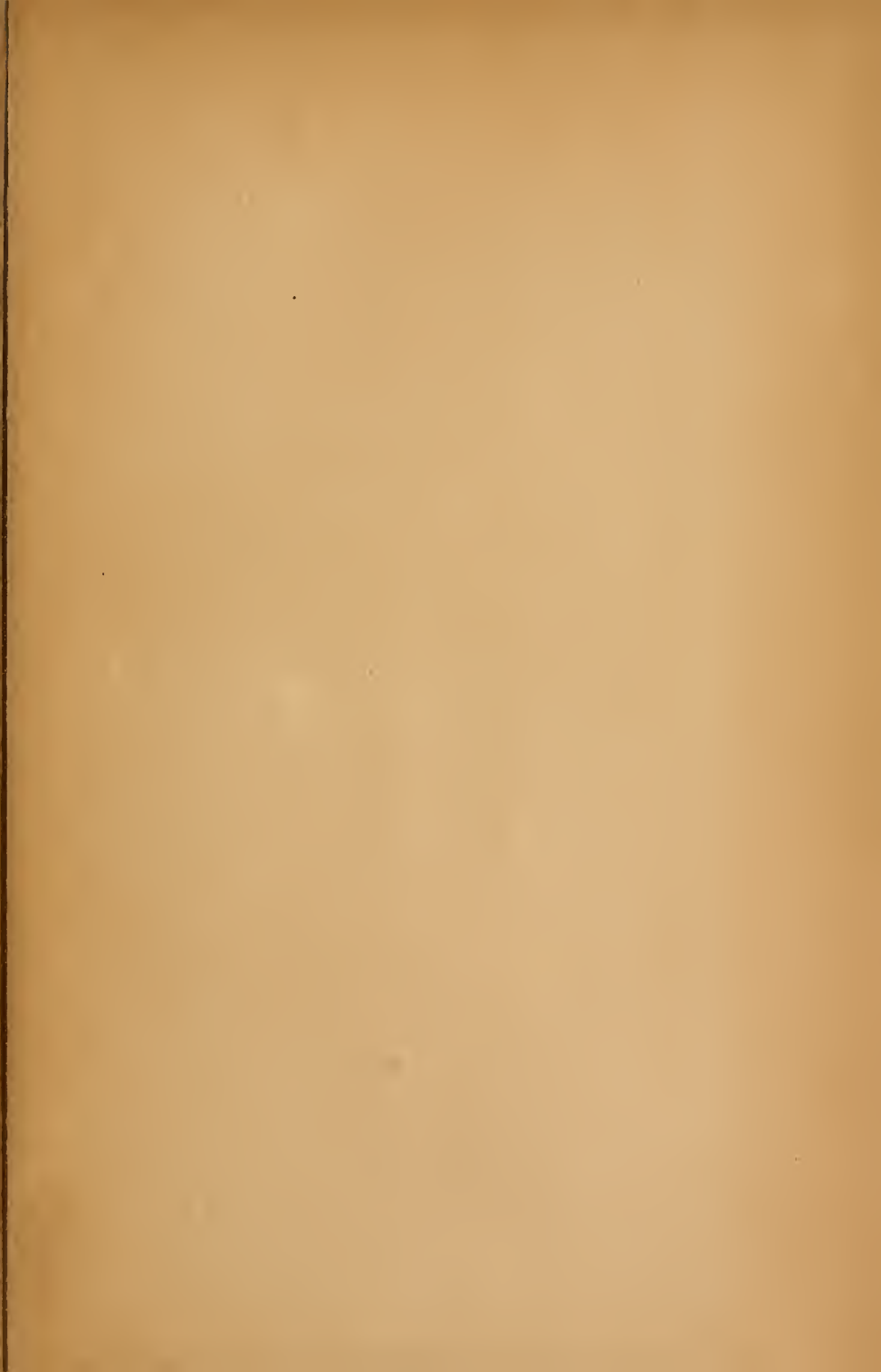
In growing young evergreens it is found necessary to protect them from the full influence of the sun for a considerable period, till by degrees they acquire strength to withstand the exposure. These also undergo two or three transplantings before they acquire the proper size, so that even those most impatient of removal become prepared to undergo the process with comparative impunity—a preparation the more needful in the case of evergreens for the reason that, unlike deciduous trees, there is no time in which they are not subject to the drain upon their vitality, arising from the evaporation of moisture through their persistent foliage, and, therefore, this tax upon their vitality is so much added to the shock of removal.

There is, however, no longer occasion, as a matter of even the closest economy, to resort to the forest for a supply, since nursery-grown trees are offered at prices little if any above the value of the labor necessary to remove them from the forest.

WHERE THEY SHOULD BE PLANTED.

The object of screens is manifold. The first object of a householder should doubtless be to render the residence, its yards and outbuildings and their occupants comfortable. It is by no means uncommon to see a fine residence, with suitable outbuildings, standing exposed to the full force of westerly and northerly winds, even where the farm appointments otherwise unmistakably indicate an owner in easy circumstances, and abundantly able to supply the needed protection. On such a place they should, beyond doubt, be planted so as to shelter the house and lawns and the yards occupied by the farm stock, not merely as a matter of comfort to man and animals, but also as an economical investment to save the stock of fuel, and to economize the feed consumed by stock in the process of generating animal heat. The object subserved, we would next, if still needful, plant a low screen (but one that will grow to be ten or twelve feet high) along the exposed side or sides of the kitchen garden, and in so doing provide the needful shelter for early vegetables, as well as a nook for the location of a hot bed and cold frames. Having provided for these needs, attention may next be given to the screening of the orchards from westerly or northerly winds. We are not unaware that some intelligent orchardists doubt the advantage of such protection, but we fancy that after a man shall have lost, or nearly lost, for year after year, the one fourth or one-half of his crop of fruit from the effect of high winds, just before the picking season, a slight effort of the imagination might convince him that less wind and more fruit might have been for his advantage. We recollect that at the recent meeting of the State Pomological Society at Hillsdale, Mr. Joseph Lannin, of South Haven, took issue with our expressed views on this subject by saying he did not think a screen would be of any advantage to his orchards. In this he may be correct, since no screen on either the west or north sides thereof could at least for many years shelter the trees to any great extent, if planted on the border of the orchard, for the reason that such borders are on lower ground; so that screens must be grown to a very considerable height before they become effective. We know that many men here are so carried away with the idea that the lake is our protection that they prefer a full exposure to lake breezes. The two severe winters of the last decade, however, gave at least some of these gentlemen the idea that it may even be possible to have too much of a good thing. Some of them lost peach trees by the hundred, clearly in consequence of full westerly and northerly exposure with long continued cold. In fact, we have in mind a peach orchard directly upon the bluff to which the orchard committee of 1873 awarded a first premium, but which during the next winter was killed outright by the severe and long continued cold, with the exception of a few of the trees standing upon the east bluff inclined from the lake. A neighboring orchard similarly situated, but sheltered from the winds by a belt of trees, came through the same winter uninjured. But there are doubtless reasons why a screen for the protection of an orchard, especially if it contains cherries, peaches or even pears, should be open enough to impede but not fully arrest the circulation of the air.

—T. T. Lyon, in *Michigan Farmer*.





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